March 2009

WWF HONG KONG: SEAFOOD SUPPLY

Erin E. Burns
Worcester Polytechnic Institute

James Benton Dickson
Worcester Polytechnic Institute

Jennifer Christine Dahlmann
Worcester Polytechnic Institute

John T. Zeb
Worcester Polytechnic Institute

WWF HONG KONG: SEAFOOD SUPPLY

February 20, 2009

Sponsoring Agency: WWF Hong Kong

Submitted to:

Project Advisor: Jeanine Skorinko, WPI Professor

Project Co-Advisor: Stanley Selkow, WPI Professor

On-Site Liaisons: Clarus Chu, Elbe Lam and Guillermo Moreno

Submitted by:

Erin Burns

Jennifer Dahlmann

James Dickson

John Zeb

ABSTRACT

To help increase sustainability of seafood in Hong Kong, the World Wide Fund for Nature Hong Kong created a Seafood Guide. In order to support this initiative we have conducted an awareness survey and gathered data on current labeling policies. The respondent reported an increased of awareness of sustainable seafood issues when purchasing after seeing the seafood guide and identified locations where the guide could be used.

EXECUTIVE SUMMARY

Hong Kong has long demanded more fish than its waters can supply (Niazi, S., et al. 2008, p. 8). This demand, combined with the advances in fishing practices, has contributed to an increase in unsustainable fishing, both depleting fish stocks and requiring Hong Kong to import seafood from new sources to meet demand (Figure 1; Niazi, S., et al. 2008, p. 15). Thus, we set out to examine ways to increase the sustainability of seafood. In particular, we focused on Hong Kong's high consumer demand and investigated ways to change consumers' perceptions and purchasing behavior.

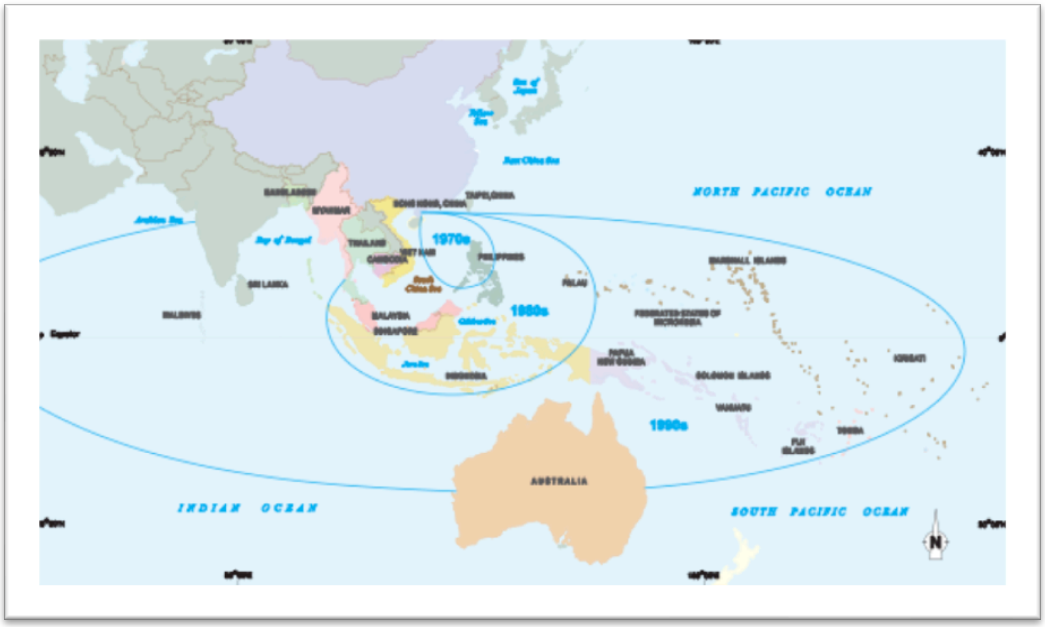

Figure 1: Expanding Area Needed to Supply Hong Kong's Seafood

To promote sustainability this project examined an educational program, The Seafood Choice Initiative, to determine its ability to change consumer perceptions and purchasing habits. The Seafood Guide, distributed by the World Wide Fund for Nature Hong Kong ("Seafood Choice Initiative", 2009) is a wallet sized guide that educates consumers on which seafood products are sustainably sourced. Past research indicates that educational programs such as the Seafood Guide can promote sustainable purchasing habits (Teisl, Roe, & Hicks, 2002, p. 356). However, such a program relies heavily on seafood labels that contain sufficient information for consumers to make educated decisions (Jacquet & Pauly, 2007, p. 6). This is problematic, as government label regulations do not require seafood labels to contain enough information for the Seafood Guide to be properly utilized ("Food and Environmental Hygiene Department", 2007).

To determine the potential of the Seafood Guide conservation program, we collected current consumer awareness of sustainability and the effect of the information within the Seafood Guide. Addressing the need for specific information on labels, we investigated supermarket seafood labeling information.

We conducted an awareness survey to examine the viability and effects of the Seafood Guide and consumer awareness of eco-friendly seafood. The survey, written in both English and Chinese, was administered in person and online to a total of 530 participants throughout 15 locations in Hong Kong. We first analyzed awareness of sustainability by asking consumers to rank, using a 1 to 5 Likert scale, the amount varying traits influence their decision when purchasing seafood. Most participants reported that freshness (Median = 5) and species (Median = 4) were very important criteria when purchasing seafood. They further reported that the eco-friendliness of seafood (Median = 3) was considered but only moderately influenced purchasing behaviors.

Further analysis revealed that 22% of the population had seen the Seafood Guide. This number represents little change from a June 2008 survey conducted to determine current awareness of the Seafood Guide that also found 22% of the population had seen the guide (Clarus Chu, personal communication, February 18, 2009). Additionally, 42% of the participants reported that the guide would be useful, whereas 16% deemed that the guide would not in fact be useful. Lastly, 43% of the participants believed that the guide changed their opinions on purchasing seafood they should avoid, and 23% reported that it did not change their opinions.

In order to determine what information was contained on labels, a naturalistic study of supermarket labels was conducted to find if they contained the common name, scientific name, source (i.e. origin), brand and whether the seafood was wild caught or farmed. For each product the researchers recorded the criterion and any other information, such as eco-labeling. The supermarkets were chosen to encompass a range of brand names and clientele.

Our research found 100% of labels contained common name and brand name, 84% contained origin, 5% contained “wild caught”, and 1% contained “farmed.” These results show that the majority of labels contain the common name and source, an insufficient amount information for the Seafood Guide to be used for all seafood products as certain species require being marked as wild caught or farmed to use the Seafood Guide. However, the guide frequently needs only common name and source of the product to allow for a sustainable purchase as the distinction between wild caught and farmed is rarely reported. Therefore, the guide can be used in conjunction with labels containing the common name and source, enabling consumers to make eco-friendly purchasing decisions.

Overall, the results of our observations and survey analysis show that although consumers in Hong Kong are aware of eco-friendly seafood products it is not an important consideration when purchasing seafood. Many consumers reported that the Seafood Guide changed their opinion of purchasing red list fish, increasing awareness of sustainability. Additionally, supermarket labels do not provide enough information to make sustainable purchasing decisions when depending solely on labels. The Seafood Guide addresses this as well, as consulting the guide allows for sustainable purchasing decisions at select supermarkets. Due to a reported increase in sustainability awareness and allowing consumers to make sustainable purchasing decisions, we recommend a wider distribution for the Seafood Guide.

AUTHORSHIP

Key:
Erin Burns - EB
Jennifer Dahlmann - JD
James Dickson - JBD
John Zeb - JZ

	Drafter(s)
Abstract	JBD
Executive Summary	ALL
Chapter 1: Introduction	ALL
Chapter 2 Background	EB
2.1 Hong Kong's Ecological Footprint	EB, JBD
2.2 Unsustainable Fishing	JBD
2.2.1 Overfishing	JBD
2.2.2 Bycatch	JBD
2.3 Ways to Increase Sustainability	JBD
2.4 Ways to Influence Consumers	JBD
2.4.1 Consumer Education	JZ
2.4.2 Labeling	JD
2.4.3 Examining Labels – Supermarkets	EB, JBD
2.5 Conclusion	EB, JBD
Chapter 3: Methodology	EB, JZ
3.1 Study 1 – Survey	EB, JZ
3.1.1 Participants	EB, JZ
3.1.2 Design	EB, JZ
3.1.3 Procedure	EB, JZ
3.2 Study 2 – Labeling Information	EB, JZ
3.2.1 Design	EB, JZ
3.2.2 Procedure	EB, JZ
Chapter 4: Results	JZ, JBD
4.1 Awareness and Influence of the Seafood Guide	JZ
4.2 Labeling in Supermarkets	JZ
4.3 Exploratory Analysis	JZ
4.3.1 Criteria Valued When Purchasing Fish	JZ
4.3.2 Seafood Buying Locations and Amount Spent	JZ
4.3.3 Origin and Wild Caught or Farmed Awareness	JZ
4.3.4 Seafood Consumption	JZ
4.3.5 Interest in Government Regulation of Label Criteria	JZ
4.3.6 Age	JZ

TABLE OF CONTENTS

LIST OF FIGURES

Chapter 1: Introduction

Every species of fish currently caught commercially will be nearly extinct by 2048 if current practices are not modified (Worm, et al. 2006, p. 790). Right now, the largest threat to fish conservation is unsustainable fishing practices (Somma, 2006, p. 14). Unsustainable practices such as overfishing, bycatch, degradation of the ecosystem, and pollution must be stopped in order to guarantee the continued supply of seafood. Fisheries worldwide need to implement sustainable fishing practices, activities that do not cause or lead to undesirable changes in biological and economical productivity, biological diversity or marine ecosystem structure and functioning from one human generation to the next.

For Hong Kong, possible disappearance of all currently caught fish poses a serious threat. Seafood is incredibly important in Hong Kong, with the average resident consuming 3.6 times more seafood than the world average ("Our Seafood Consumption", 2009). Past research found that creating demand for sustainably sourced seafood via educating consumers could directly influence fishing methods. For example, demand for sustainable seafood caused fishers in the Kyoto Danish Seine Fishery Federation to agree to rigid sustainable fishing guidelines regulating number and design of fishing nets allowed on vessels ("Kyoto", 2008).

These successes encouraged WWF Hong Kong to enact their own consumer education programs. WWF Hong Kong released a Seafood Guide, a method that past research shows can educate consumers and therefore decrease purchasing of unsustainable fish (Teisl, Roe, & Hicks, 2002, p. 356). The guide is a wallet sized pamphlet intended to be used as a reference when purchasing seafood ("Seafood Choice Initiative", 2009). However, the guide requires common name and origin of fish to be used a reference. Hong Kong labeling regulations do not require

this information to be on seafood products, meaning it is possible this information is not available ("Food and Environmental Hygiene Department", 2007).

To examine the effects of the Seafood Guide in Hong Kong, we determined the labeling policy in supermarkets and consumer awareness of the Seafood Guide. Supermarkets were chosen due to their steadily increasing share in the overall food market (Ho, 2005, p. 94). We verified this using a consumer awareness survey and by observing supermarket seafood counters. This information is necessary for the Seafood Choice Initiative to continue to provide consumers with information about sustainable seafood and this report will aid WWF Hong Kong in refining its conservation strategies.

Chapter 2: Background

This chapter discusses Hong Kong's high demand for seafood as well as current unsustainable fishing practices. It then examines previous methods used to encourage sustainable fishing. Consumer education, one of the most prominent and feasible answers to unsustainable fishing, is discussed, along with evidence that supermarkets are the ideal location to investigate current practices.

2.1 Hong Kong's Ecological Footprint and Seafood Consumption

Hong Kong's ecological footprint (a method of comparing human consumption of natural resources and the ability of the environment to reproduce those resources), shows that Hong Kong uses 250 times more area than the natural resources its ecosystem can reproduce (Niazi, S., et al. 2008, p. 8). Hong Kong's ecological footprint per person was reported at 4.4 global hectares, more than double the global hectares the planet can support on average (Niazi, S., et al. 2008, p. 2).

While an ecological footprint applies to all natural resources such as timber and coal, it also includes consumption of seafood. An examination of seafood consumption rates in Hong Kong shows that Hong Kongers consume large quantities of seafood; in fact, they consumed over 428,000 tonnes of seafood in 2005 alone ("Our Seafood Consumption", 2009). This puts the average consumption of the 7 million Hong Kong residents at 62 kg per capita, a rate that is 3.6 times higher than the world average ("Bureau of East Asian", 2008; "Our Seafood Consumption", 2009). Hong Kong is the tenth highest consumer per capita of seafood across the globe and the third highest consumer per capita in Asia ("Our Seafood Consumption", 2009).

Hong Kong fish stocks cannot supply the seafood it demands as years of unsustainable fishing has drastically diminished the available fish in the Hong Kong ecosystem (Niazi, S., et al.

2008, p.8). For example, in the 1950's, Hong Kong's waters were home to a diverse and substantial fish stock that included fish represented in Figure 2. Manta rays and reef sharks were abundant, green turtles were seen nesting on many beaches, and numerous schools of fish were seen in the waters. Hong Kong water's no longer have an abundant and diverse fish stock; rather, many species are locally extinct and those that remain are greatly depleted, as seen in Figure 3 ("SOS – Save our seas", 2008). Manta rays no longer frequent these waters, reef sharks are virtually extinct, and turtles have been seen less frequently since then ("SOS – Save our seas", 2008). Of the fish that remain, the total numbers have radically decreased and the physical size of the fish has diminished.

Figure 2: Representative Species Present in 1950 Hong Kong Waters

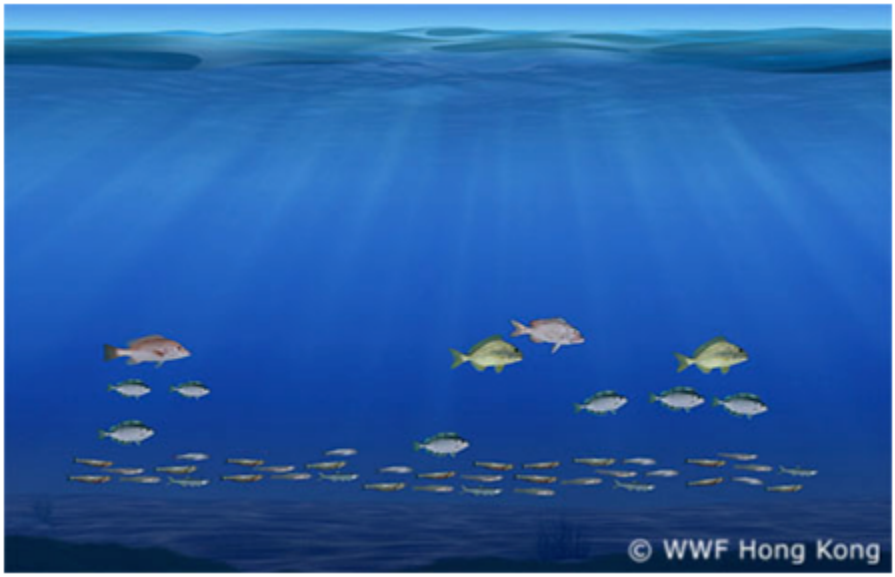

Figure 3: Representative Species Present in 2008 Hong Kong Waters after 30 Years of Fishing

Since Hong Kong's seafood consumption is greater than what it can naturally produce (see Figure 4), it must import fish to meet its seafood demand. For example, in 2001 only 22,750 tonnes (roughly 6%) of Hong Kong's seafood supply was domestically sourced; consequently, the remaining 342,500 tonnes of needed seafood was imported (Warren-Rhodes, K. & Koenig, A., 2001, p. 353). As a result of the continued demand for seafood in Hong Kong, the natural supplies of fish are diminishing from a larger and larger area (Figure 4; Niazi, S., et al. 2008, p. 15)

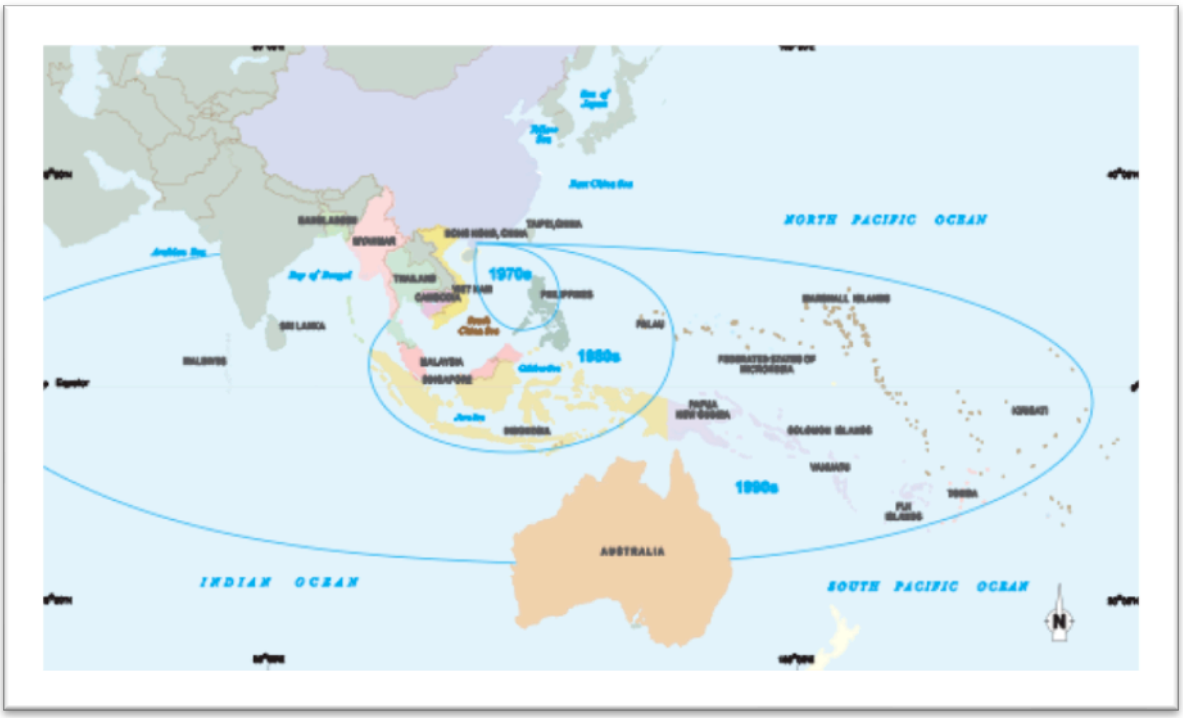

Figure 4: Expanding Area Needed to Supply Hong Kong's Seafood

2.2 Unsustainable Fishing

This high level of demand for seafood leads fishers to optimize the amount of fish caught in order to maximize profit. Consequently, unsustainable fishing methods that deplete fish stocks are being used to meet consumer demand. These practices hurt marine ecosystems (Zabel, Harvey, Katz, Good, & Levin, 2003, p. 153).

2.2.1 Overfishing

Overfishing, the act of catching fish at a rate faster than they can repopulate, is one unsustainable method that fishers have used to satisfy the level of demand for seafood. This method became a problem in the 1970's and 1980's when fisheries began to focus on increasing the take (or quantity) of fish caught in response to consumer demand (Buck, 1995, p. 4). In order to meet the increase in demand, the fishing fleet expanded exponentially, and this expansion

enabled larger quantities to be caught. One consequence of overfishing is the diminished average size of the fish being caught (as the bigger fish are caught only the smaller, less mature fish remain) (Somma, 2006, p. 14). A second consequence is that overfishing depletes the overall fish population (Zabel, et. al, 2003, p. 154).

2.2.2 Bycatch

Another consequence of meeting the demand for seafood is bycatch, the unintentional harvesting of marine species in addition to the target species. Bycatch is a consequence of the modernization of fishing fleets. Bycatch has serious ramifications for the ecosystem as one out of every four animals mistakenly caught in fishing gear dies ("Wherever there is fishing", 2008). As species of fish are unintentionally removed from the environment through bycatch, the available food for other marine species is also removed (Zabel et al., 2003, p. 154). This causes a chain of events that culminates with an unbalanced ecosystem.

2.3 Ways to Increase Sustainability

Due to the high demand for seafood, the current seafood sourcing practices will lead to a global collapse of all currently caught fish species by 2048 if no actions taken (Worm, et al. 2006, p. 790). Given the seriousness of the situation, finding ways to increase the sustainability of fish stocks is important to improve and preserve the current marine ecosystem. Previous research has examined two main methods to improve sustainability. One method focuses on ways to change the unsustainable fishing practices (e.g., regulating fish supplies through quotas), while the other focuses on ways to change consumer demand and consumption.

Researchers interested in conservation and seafood conservation organizations traditionally addressed the issues of increasing sustainability by focusing on the ways to regulate the supply of fish (LeBlanc, 2006, p. 30). Popular methods promoted by past research and

subsequently advocated by the conservation organizations focus on regulating and instituting laws that force fishers to change to more sustainable fishing methods (Buck, 1995, p. 8). These regulations include setting quotas on the number of fish allowed to be caught seasonally, regulating legally permissible fishing gear (e.g., specially designed nets to reduce bycatch), legally controlling the waters where fishing can occur, and legally controlling the times during the seasons when certain species may be caught (e.g., spatial and/or temporal no-take areas/zones). A problem with supply based regulations is that fishers still have incentive to unsustainably fish around the law. For example, fishers frequently respond to quotas that limit overall take from an area by modernizing and increasing size of the fishing fleet in order to catch as many fish as possible before the quota is reached (Buck, 1995, p. 8).

Research on the effectiveness of these regulations has shown mixed results, and one study found these regulation methods ineffective (Grafton et al., 2006, p. 700). In order to increase the effectiveness of the regulations, research looking into this issue suggested providing incentives to fishers to encourage them to follow the regulations and sustainably fish (Grafton et al., 2006, p. 706). For example, a fishery in the Kyoto Danish Seine Fishery Federation agreed to regulations limiting size of take and methods of fishing. In exchange, the fishery was allowed to use a certified eco-label that increased the value of its fish ("Kyoto", 2008).

While regulating fisheries can help reduce unsustainable fishing and allow depleted fish populations to recover, another important component that past researchers have neglected to address is the role the consumer plays in supporting unsustainable fishing practices. Consumer seafood preferences and demand for certain products directly influences seafood supply, and therefore may indirectly influence the methods used by fishers to meet these preferences. Such an attempt to use consumer demand pressures to encourage fishery reform could be hampered by

incorrect labels. Seafood is frequently renamed or otherwise incorrectly labeled by fishers in order to obscure the origin of illegally sourced fish or increase profits by selling low-value fish as of more popular species. (Jacquet & Pauley, 2007) Despite this and other possible issues with demand pressures, due to the lack of research pertaining to shaping consumer demand to influence the fishing industry, we set out to investigate the role consumers play in the sustainability issue and examine methods to change consumer habits.

2.4 Ways to Influence Consumers

While past research has not directly investigated methods to change consumers' habits for sustainable fish, research has shown that consumers are less likely to change their behaviors when they are unaware of the consequences of their choices (e.g., buying products that are unsustainable for the environment; "Greenpeace", 2005, p.85; "Seafood Choice Initiative", 2009). One way to provide information to consumers is through the labels placed on products, a method that past research shows can influence consumers' behavior (Batte, Beaverson, & Hooker, 2003, p. 6; Grankfist, Dahlstrand, & Biel, 2004, p. 12; Owens, 2007, p. 7).

2.4.1 Consumer Education

In an attempt to promote sustainable purchasing decisions, some conservation groups have begun initiatives to educate consumers on issues of sustainability. For instance, the Seafood Choice Initiative is a consumer education program started by WWF in 2001[1] that aims to provide consumers with information on the environmental impact of consuming seafood ("Seafood Choice Initiative", 2009). To do this WWF Hong Kong released a wallet sized Seafood Guide (Figure 5) in 2007 that helps consumers distinguish sustainable and unsustainable seafood

[1] WWF Hong Kong joined this effort in 2007

products when making purchasing decisions. The fish on the guide are divided into three categories based on sustainability: Recommended (shown in Green and are sustainably caught), Think Twice (shown in Yellow and are borderline in sustainability), and Avoid (shown in Red and are unsustainably caught; "Seafood Choice Initiative", 2009).

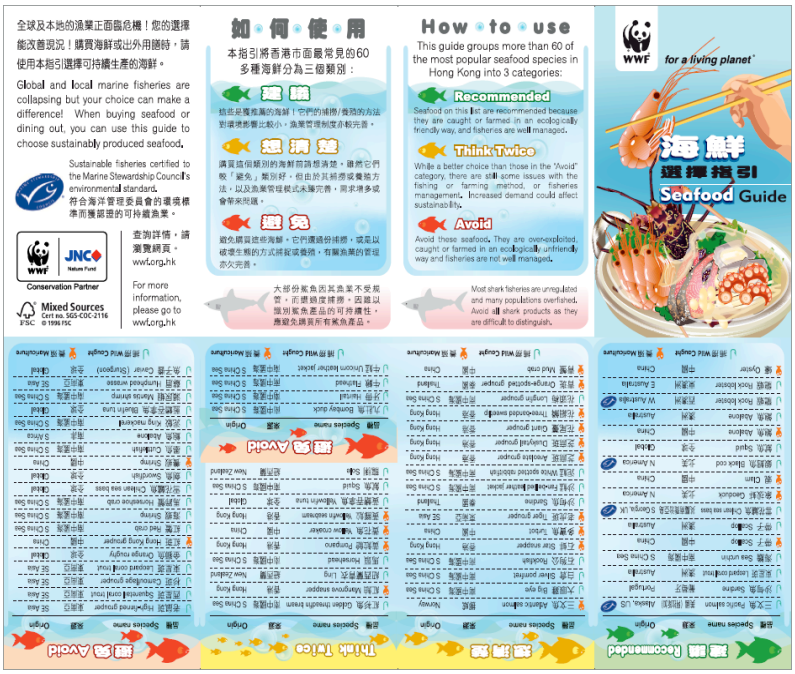

Figure 5: Seafood Choice Initiative Guide

Though educating consumers is one possible method of changing their behaviors, several obstacles can interfere with the effectiveness of this method. For instance, though the information is available to educate consumers, it is possible that consumers are unaware that the information exists. Thus, we set out to examine people's awareness of the Seafood Guide ("Seafood Choice Initiative", 2009) in order to better understand if this could be an effective way to educate consumers on issues of sustainability.

2.4.2 Labeling

Even when the consumer is aware of and armed with information (e.g., the Seafood Guide), the information provided by the products may be insufficient to promote purchases that

support a cause (e.g., environmentally friendly products; "Greenpeace", 2005, p. 85; Jacquet & Pauly, 2007, p. 6). Labels on products could be an effective means to communicate the necessary information to consumers. In addition, research on persuasion shows that people are typically persuaded either centrally (i.e., through compelling evidence or information) or peripherally (i.e., through subtle cues; see Dillard & Pfau, 2002, p. 156). Therefore, labels may be an effective persuasion tool as they can provide both information and subtle cues to persuade both centrally and peripherally and may be an effective persuasion tool.

Past research has shown that labels can be effective in persuading consumers. For instance, research found that people preferred ecologically friendly labeled food products over products not labeled as eco-friendly (Teisl et al., 2002, p. 356). In addition, research also found that people reported being willing to pay more for products based on their label, especially those labeled as being environmentally friendly (Batte et al., 2003, p. 6; Grankfist, et al., 2004, p.12; Loureiro & Lotade, 2005, p. 7; Wessells, Johnston, & Donath, 1999, p. 3). Thus, the research suggests that "providing information to consumers through labeling can alter behavior" (Teisl et al., 2002, p. 356).

Focusing specifically on current eco-friendly labeling, we found that the Marine Stewardship Council (MSC)[2] puts the theory of advancing conservation efforts through labels into practice by placing a eco-label on certified seafood products ("Ecolabels", 2008; Owens, 2007, p. 7; for detailed information on the certification guidelines see Appendix C). Research investigating the effectiveness of this label found that it successfully persuaded consumers to prefer purchasing sustainable seafood as the price per pound for the MSC certified Alaskan Salmon increased by 12.5% in response to increased consumer demand ("Promoting Sustainable

[2] MSC was cofounded by WWF and Unilever for the purpose of fighting against the problem of unsustainable seafood in 1997 and become independent in 1999 (Owens, 2007, p.7).

Salmon", 2008, p. 2). Given that labels can be an effective method of persuading consumers towards different products, especially ecologically friendly ones, we set out to examine the extent to which seafood products are labeled in the marketplace.

Labeling strategies differ, some providing substantial information about the product (see Figure 6) while others offer very little (e.g., the MSC label, see Figure 7; "US Food and Drug Administration", 2009; Owens, 2007, p.1). Thus, we set out to examine the content on the labels to better understand whether the current seafood label in Hong Kong provides a simple peripheral cue (e.g., simply labeled "eco-friendly") or provides more substantial information about the product in order to better understand what information is reaching the consumer.

Nutrition Facts

Serving Size 1 cup (228g)
Servings Per Container 2

Amount Per Serving	
Calories 260	Calories from Fat 120
	% Daily Value*
Total Fat 13g	**20%**
Saturated Fat 5g	**25%**
Trans Fat 2g	
Cholesterol 30mg	**10%**
Sodium 660mg	**28%**
Total Carbohydrate 31g	**10%**
Dietary Fiber 0g	**0%**
Sugars 5g	
Protein 5g	

Vitamin A 4% • Vitamin C 2%
Calcium 15% • Iron 4%

*Percent Daily Values are based on a 2,000 calorie diet. Your Daily Values may be higher or lower depending on your calorie needs:

	Calories:	2,000	2,500
Total Fat	Less than	65g	80g
Sat Fat	Less than	20g	25g
Cholesterol	Less than	300mg	300mg
Sodium	Less than	2,400mg	2,400mg
Total Carbohydrate		300g	375g
Dietary Fiber		25g	30g

Calories per gram:
Fat 9 • Carbohydrate 4 • Protein 4

Nutrition Facts

Serving Size 2 slices (56g)
Servings Per Container 10

Calories 140
Calories from Fat 15

Amount/serving	% Daily Value*	Amount/serving	% Daily Value*
Total Fat 1.5g	**2%**	**Total Carbohydrate** 26g	**9%**
Saturated Fat 0.5g	**3%**	Dietary Fiber 2g	**8%**
Trans Fat 0.5g		Sugars 1g	
Cholesterol 0mg	**0%**	**Protein** 4g	
Sodium 280mg	**12%**		

Vitamin A 0% • Vitamin C 0% • Calcium 6% • Iron 6%
Thiamin 15% • Riboflavin 8% • Niacin 10%

* Percent Daily Values are based on a 2,000 calorie diet. Your daily values may be higher or lower depending on your calorie needs:

	Calories:	2,000	2,500
Total Fat	Less than	65g	80g
Sat Fat	Less than	20g	25g
Cholesterol	Less than	300mg	300mg
Sodium	Less than	2,400mg	2,400mg
Total Carbohydrate		300g	375g
Dietary Fiber		25g	30g

Figure 6: Approved Nutritional Labels

Figure 7: MSC's Label

2.5 Examining Labels--Supermarkets

In order to conduct our observations, we focused on the labels found on products sold in supermarkets. While traditionally most consumers shopped at wet markets (government run or commercial markets located in highly trafficked areas), street vendors and hawkers, supermarkets are beginning to rise in popularity as evidenced by the increase in their market share. Hong Kong Census and Statistics Department data from 1984 to 2000 (Figure 8) shows this steady increase in food purchasing at supermarkets (Ho, 2005, p. 94). This statistic suggests that supermarkets hold an increasing amount of influence. Given this rising popularity, we focused on labeling of products sold within supermarkets.

	Household Expenditure Share (%)			
Categories of Food Outlet	1984–1985	1989–1990	1994–1995	1999–2000
Market/street stall and meat/fish/vegetable shop	56	62	65	49
Supermarket (including convenience store)	15	17	21	26
Store/provision store and fruit store	3	2	2	5
Bakery/cake shop	3	4	4	4
Grocery and sea product shop	4	3	3	2
Others	19	13	5	13

Figure 8: Household Expenditure Shares

2.6 Conclusion

Research shows that Hong Kong consumes a large amount of seafood, and this demand for seafood may help encourage unsustainable fishing practices (Niazi, S., et al. 2008, p. 15). Unsustainable fishing practices deplete the fish stock populations and threaten the vitality of the

marine ecosystem (Zabel, et. al, 2003, p. 154). The severity of this issue has prompted researchers to explore ways to increase the sustainability of fishing practices by controlling fishing methods and locations (Buck, 1995, p. 8; Grafton et al., 2006, p. 700). However, the consumer also plays an important role as high demand encourages unsustainable fishing. Yet, demand has not been empirically explored as a method to promote sustainability in Hong Kong. Thus, we set out to investigate the role consumers play in the sustainability issue and examine methods to change consumer habits.

Some conservation groups have implemented educational programs to increase awareness of issues pertaining to sustainability ("Seafood Choice Initiative", 2009; Jacquet & Pauly, 2007, p. 6). However, it is possible that consumers are unaware that the educational programs exist. Therefore, we examined people's awareness of one of these initiatives, The Seafood Guide, in order to better understand if this could be an effective way of educating consumers on issues of seafood sustainability. In addition, past research shows that labels are an effective way to persuade consumers (Teisl et al., 2002, p. 356). Given the effect of labeling on consumer decisions, we also explored the contents of seafood product labels in supermarkets.

Chapter 3: Methodology

The main goals of this project are to determine the nature of seafood labels in Hong Kong markets, consumers' awareness of the issues of sustainable seafood (e.g. The Seafood Guide and product labels). This was carried out through a survey and observation of existing seafood labels on products sold in supermarkets.

3.1 Study 1 – Survey

3.1.1 Participants

530 (233 males, 288 females, 8 did not respond) individuals participated in this survey. 460 participants were engaged in face-to-face surveying, while 70 participants took the survey online. Of the participants, 444 were residents of Hong Kong, while 61 were tourists (25 did not respond). 187 were the primary buyers for their household, while 322 were not (21 did not respond). In addition, participants ranged in age (52 were 18 and below, 137 were [19-25], 136 were [26-35], 94 were [36-45], and 97 were [46 +], 14 did not respond) and education level (30 - Primary, 190 - Secondary or Post-Secondary, and 289 - University or above, 21 did not respond). Participants were not offered any incentives for completing this survey.

3.1.2 Design

To examine consumers' awareness of the issues of sustainable seafood (e.g. The Seafood Guide and product labels), as well as consumers' seafood purchasing habits and preferences, we conducted a survey. Adapting from previous research (Elbe Lam, personal communication, January 5, 2009; Boulanger, Demott, Nikitas, & Patchel, p. 58-61), fifteen questions were asked about fish consumption, sustainability, and awareness, with demographic questions included. The survey measured seafood consumption by assessing whether participants liked and

consumed fish. Participants were offered the choices “yes”, “sometimes”, and “no” for these questions. Questions pertaining to seafood purchasing behavior (e.g. location of purchases and amount spent) then followed, and they were measured with Likert scale responses. Following seafood purchasing behavior, an assessment of factors (e.g. price, freshness, eco-friendly) that influence purchasing was asked, again measured with Likert scale responses. In addition, questions asking if unsustainable fishing practices would influence buying habits (e.g. would you stop purchasing unsustainably sourced fish?) were asked, measured again with a Likert scale. Likert scale questions were also asked pertaining to whether the government should implement labeling regulations (e.g. common name, scientific name, harvesting method, etc.). Lastly, awareness was assessed by asking questions pertaining to the Seafood Guide produced by WWF Hong Kong. These were measured with yes and no check boxes, as well as Likert scale answers. Demographic information was also collected (e.g. gender, age, residency, occupation, and education level). See Appendix E for the Consumer Survey and how items were scaled.

Since the two official written languages of Hong Kong are English and Chinese, the survey was administered in both languages. The survey was also administered both online and through paper and pencil.

3.1.3 Procedure

After agreeing to complete the survey, participants learned that we were investigating attitudes towards seafood products. Some participants were randomly selected from public areas (e.g. parks, promenades) and other participants completed the survey online. To increase the representativeness of the sample, participants were recruited from varying districts throughout Hong Kong (including Kowloon, Hong Kong Island, and the New Territories). In addition, the survey was written in English and Chinese, and both English and Cantonese speaking researchers

administered the survey in the public areas. See Appendix D for a complete list of locations. To limit the influence that day of week may have had, the survey was conducted over nine consecutive days. After completing the survey, participants were thanked for their participation.

3.2 Study 2 - Label Information

3.2.1 Design

To examine the availability of information on seafood product labels in Hong Kong, we conducted a naturalistic observation to determine whether products sold in supermarkets were labeled and what information was on the labels. In order to obtain a more representative sample of the types of products being sold and their labels in supermarkets, we randomly sampled different chains of supermarkets throughout Hong Kong. The supermarkets included in the observational study were major chains, (e.g. PARKnSHOP and Wellcome), and supermarkets that target "increasingly cosmopolitan and sophisticated shopping clientele," (Great Food Hall, Taste, Oliver's Delicatessen, ThreeSixty, and C!ty'Super) ("Taste", 2009). In addition, two Japanese based supermarkets were included (Jusco and SOGO). See Appendix G for a complete list of the supermarkets and districts observed.

3.2.2 Procedure

In order to observe the products sold and their corresponding labels, a total of four observers visited nine different supermarket chains. From an initial observation we noticed that fish were sold as live, fresh, prepackaged, canned, and frozen. Based on this, each observer was assigned to one of the aforementioned categories (one observer examined both canned and frozen products). Upon entering each supermarket the observer recorded information pertaining to his or her designated category (e.g. live fish) and indicated if the products sold within the

category were labeled. If a label existed, the observer recorded what the label contained, looking for common names, scientific names, brand, origin, and if products were wild caught or farmed, and also noted any other information provided such as an eco-label. See Appendix H for a complete list of this information.

Chapter 4: Results and Analysis

One of the main objectives of this project was to examine population's awareness of one of the conservation programs in Hong Kong: The Seafood Choice Initiative. Another objective is to find out the extent to which seafood products are labeled in supermarkets and what do these labels contain. Further analysis examined patterns and trends that seafood consumers have and different labeling criteria they would like the government to regulate.

4.1 Awareness and Influence of the Seafood Guide

To determine whether participants were aware of the seafood guide, we examined how many people reported seeing the guide prior to taking the survey. Of the 515 participants, 401 participants (78%) reported having never seen the guide, and 114 participants (22%) had seen the guide prior to taking the survey. A chi-squared analysis showed that this difference was significant, χ^2 (N = 515) = 159.94, p = .00. Overall, participants reported that they had never seen the seafood guide.

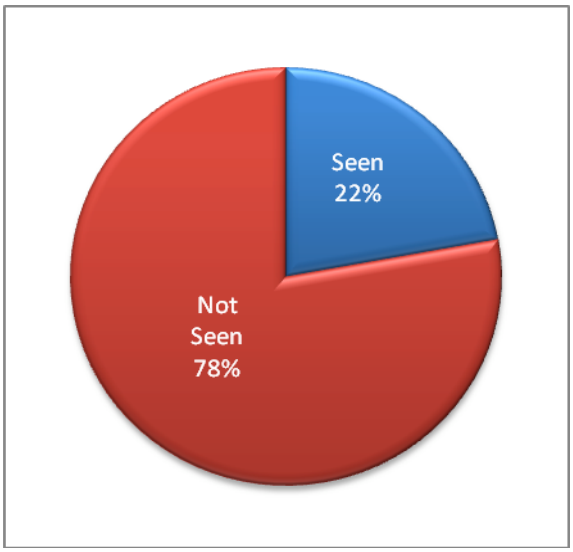

Figure 9: Seen the Seafood Guide

After showing the seafood guide to participants, we wanted to know how useful they found the guide to be. The analysis discovered that 159 (42%) of the participants believed that the guide would be useful (by indicating a 4 or 5 on the Likert scale); whereas, 62 (16%) of the participants believed the guide would not be useful (by indicating a 1 or 2 on the Likert scale). A chi-squared analysis showed this difference was significant χ^2 (N =221) = 42.57, p = .00.

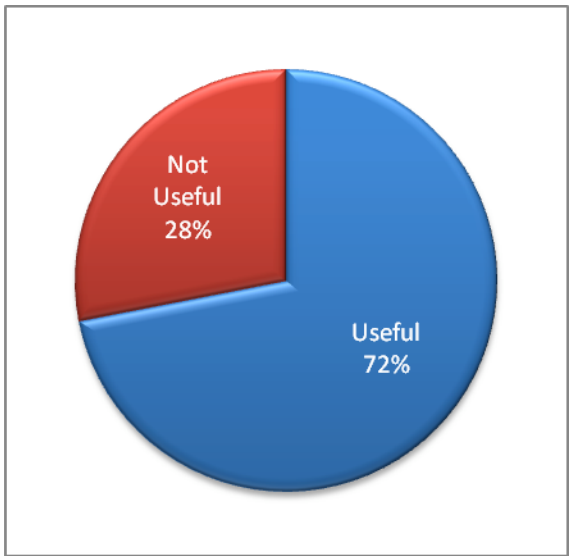

Figure 10: Seafood Guide Usefulness

We also wanted to find whether participants believed that the guide would change their opinions on purchasing fish they should avoid (those listed as red). The analysis found that 166 (43%) participants believed the guide changed their opinions on purchasing fish they should avoid (by indicating a 4 or 5 on the Likert scale); whereas, 89 (23%) of the participants believed the guide did not change their opinions (by indicating a 1 or 2 on the Likert scale). A chi-squared analysis showed this difference was significant χ^2 (N = 255) = 23.25, p =.00.

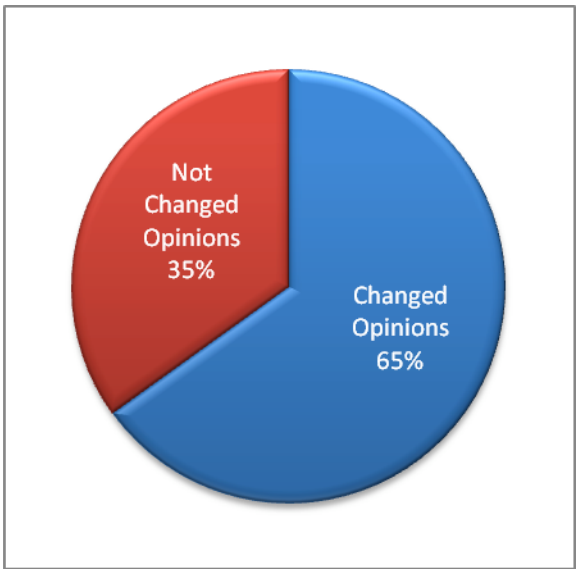

Figure 11: Seafood Opinions of Red List Fish

In order to see if those who reported seeing the Seafood Guide were more eco-friendly than those who had not seen the seafood guide, a one-way ANOVA test was conducted. The results of this analysis indicate that those who had seen the guide (M = 3.45, SD = 1.23) were more eco-friendly than those who had not seen the guide (M = 3.02, SD = 1.24), $F(1, 410)$ = 7.40, p = 0.01.

We wanted to further investigate if people who valued eco-friendly fish were more likely to report that they would stop purchasing red listed fish. To do so, a median split was carried out on the responses to the question assessing how much participants valued eco-friendly fish. This test split the respondents into two groups: those who valued eco-friendly fish and those who did not. A one-way ANOVA showed that those who valued eco-friendly fish (M = 3.62; SD = 1.09) were more likely to report that they would stop purchasing red listed fish than those who did not value eco-friendly fish (M = 2.83; SD = 1.18), $F(1, 214) = 26.44$, p =.00.

4.2 Labeling in Supermarkets

We examined fish product labels to see what specific information they provided the consumer. In particular, we were interested in whether the labels identified the fish product's common name, scientific name, brand name, source (or origin of the seafood product), and if it identified whether the product was wild caught or farmed. From our observations, we found that 100% of the 465 fish products had a common name identifying the type of fish and a brand name on the label. We found that 174 of the fish products (37%) had scientific names on the product label, further identifying the type of fish, and an additional 24 (5%) of the 465 stated the official/standard Chinese name. Observations found that 392 (84%) of the seafood products had the source. Only 25 (5%) of the products were identified as being wild caught and 3 (1%) of the products were identified as being farmed. In addition, 23 (5%) of the labels that contained a scientific name that did not match the common name or had serious spelling errors.

We also wanted to determine whether the labeling differed based on packaging type (e.g., frozen, live, canned). Out of the 465 fish products observed, 127 were prepackaged (27%), 143 fresh (31%), 99 frozen (21%), 59 canned (13%), 36 live (8%), and 1 other (<1%).

Looking at the 174 products that had the scientific name and comparing the two most frequently observed packing types that had a scientific name, we found that frozen fish products ($N = 67$) were more likely to have scientific names on the labels than any other type of packaging ($N = 44$), χ^2 ($N = 111$) = 4.77, $p = .03$. Additionally, none of the canned products contained the scientific name on the label. Furthermore, most of the live fish products (97%) included the product source on the label. Out of 143 fresh fish products, 21 (15%) were labeled as wild caught. However, looking at the 21 products that were labeled as wild caught and comparing the two most frequently observed packing types that identified the product as such, we found that

fresh fish products ($N = 21$) were more likely to be labeled as wild caught than any other type of packaging ($N = 2$), χ^2 (N =23) = 15.70, $p = .00$.

4.3 Exploratory Analyses

In addition to answering our major research questions, we were also interested in examining different factors that participants consider when purchasing seafood. We also examined different labeling criteria that participants would like the government to regulate. Finally, correlations with age and primary food buyer were analyzed.

4.3.1 Criteria Valued When Purchasing Fish

To see what criteria (e.g., price, freshness) people reported valuing when purchasing seafood, utilizing a Likert scale ranging from one to five, we looked at the median response for each criterion. Most participants reported that freshness (Median = 5) and species (Median = 4) were very important criteria when purchasing seafood. Most participants reported that price, size, and eco-friendliness were moderate considerations when they purchased seafood (Median = 3). And, most participants reported that sales promotions were only a slight consideration when they purchased seafood (Median = 2).

To examine how much people valued eco-friendly seafood compared to the other criteria, a series of dependent means t-tests were conducted. Comparing eco-friendliness to price, the results show that people value price ($M = 3.59$, $SD = 1.0$) over eco-friendliness ($M = 3.09$, SD = 1.23), t (402) = -6.32, $p = .00$. Comparing eco-friendliness to freshness, the results show that people value freshness ($M = 4.50$, $SD = .83$) over eco-friendliness ($M = 3.08$, SD = 1.24), t (412) = -20.57, $p = .00$. Comparing eco-friendliness to size, the results show that people value size ($M = 3.26$, $SD = .94$) over eco-friendliness ($M = 3.09$, $SD = 1.22$), t (399) = -2.47, $p = .01$. Comparing eco-friendliness to species, the results show that people value species ($M = 3.78$, SD

= 1.01) over eco-friendliness (M = 3.07, SD = 1.23), t (403) = -9.51, p = .00. Comparing eco-friendliness to sales promotions, the results show that people value eco-friendliness (M = 3.08, SD = 1.22) over sales promotions (M = 2.42, SD = 1.12), t (397) = -2.47, p = .01. These results show that people value price, freshness, size, and species more than they value eco-friendliness when making purchasing decisions. However, people do value eco-friendliness more than sales promotions.

4.3.2 Seafood Buying Locations and Amount Spent

In order to find what locations (e.g., supermarkets, wet markets, restaurants) people purchase seafood most often, we looked at the median response for each location, again utilizing a Likert scale ranging from one to five. A large number of participants reported that wet markets (Median = 4) were the most common location to purchase seafood. Following wet markets, the majority of participants reported that restaurants (Median = 3) and supermarkets (Median = 2) were purchased from moderately. Lastly, most participants reported purchasing seafood from other locations infrequently (Median = 1).

To further explore how often people purchase seafood at supermarkets compared to the other locations that we examined (i.e. wet markets, supermarkets, and restaurants), a series of dependent means t-tests were conducted. Comparing supermarkets to wet markets, the results show that people purchase more at wet markets (M = 3.30, SD = 1.55) than at supermarkets (M = 2.37, SD = 1.33), t (379) = -8.41, p = .00. Comparing supermarkets to restaurants, the results show that they are not statistically different from each other, t (366) = -1.59, p = .11. Comparing supermarkets to other locations (excluding wet markets, and restaurants), the results show that people purchase more at supermarkets (M = 2.40, SD = 1.35) than at other locations (M = 1.55, SD = 1.00), t (185) = 6.72, p = .00. Comparing wet markets to restaurants, the results show that

people purchase more at wet markets (M = 3.34, SD = 1.55) than at restaurants (M = 2.52, SD = 1.32), t (375) = 6.94, p = .00. The results show that people are more likely to purchase their seafood at wet markets than supermarkets and restaurants. In addition, people report purchasing their seafood at supermarkets and restaurants equally.

4.3.3 Origin and Wild Caught or Farmed Awareness

To know whether participants reported being aware of the origin of the seafood that they purchase, a frequency analysis was conducted. It found that 41 participants (8%) reported yes, they are aware of the origin of their seafood, 254 participants (49%) reported sometimes they are aware of the origin of their seafood, and 223 participants (43%) reported no to being aware of the origin of their seafood.

In order to determine whether participants were aware if the seafood they purchased was wild caught or farmed, a frequency analysis was conducted. This found that 53 participants (10%) reported yes to knowing the harvesting method of their seafood, 218 participants (42%) reported sometimes to knowing the harvesting method of their seafood, and 247 participants (48%) reported no to knowing if the seafood they purchase was either wild caught or farmed.

4.3.4 Seafood Consumption

The most common species consumed are salmon and shrimp, and the least consumed seafood species are ling, orange roughy, yellowfin sea bream, bartain flathead, duskytail grouper, and Unicorn leather jacket with less than 50 people purchasing these products. Figure 12 shows the frequency of the fish bought and consumed from the 522 people (8 did not respond) that completed the survey.

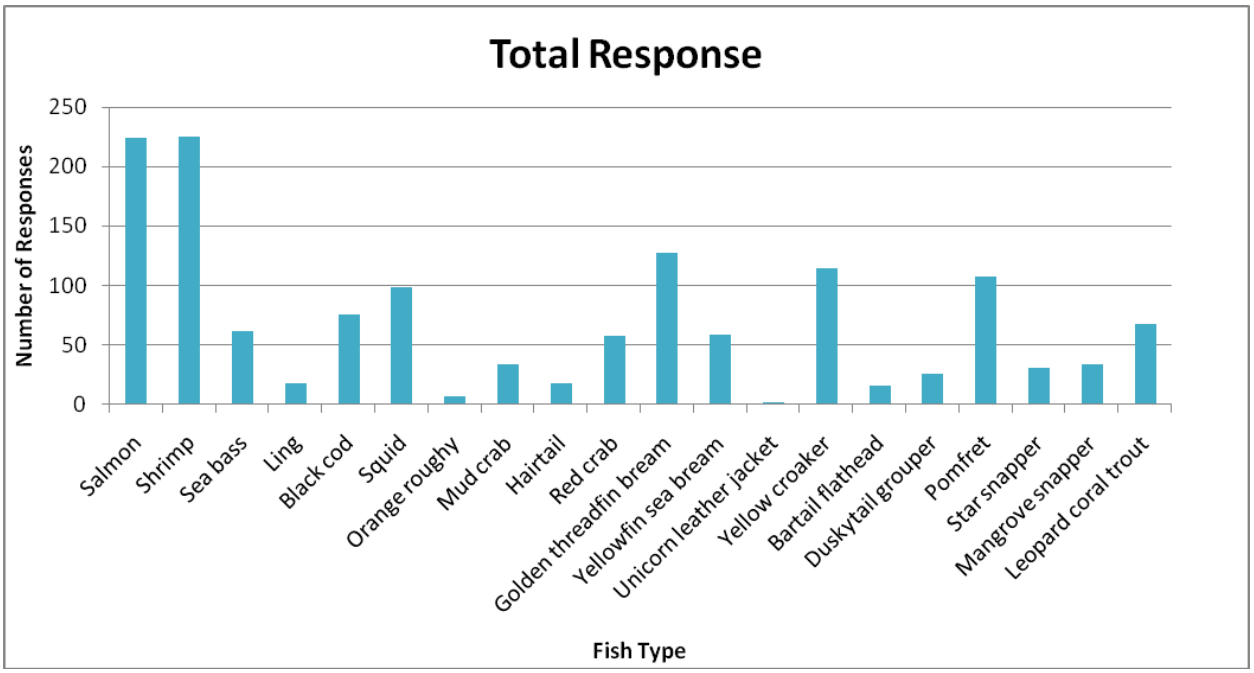

Figure 12: Fish Frequency Graph

4.3.5 Interest in Government Regulation of Label Criteria

Participants reported the extent to which they were interested in the government regulating different labeling criteria (e.g., common name, scientific name) on seafood products. To see if their level of interest in government regulation varied based on the labeling criteria, the median response for each criterion was looked at, using a Likert scale ranging from one to five. Most participants reported that common name (Median = 4), wild caught or farmed (Median = 4) and method (Median = 4) were equally important for government regulations. And, most participants reported that scientific name was a moderate consideration in government regulations (Median = 3).

To see whether people preferred to implement one criterion over another, a series of dependent means t-tests were conducted. Overall, people were not as interested in the government regulating the scientific name as much as the common name, wild caught or farmed, and method of fishing. Comparing common name to scientific name, the results show that

people were more interested in common name (M = 3.53, SD = 1.25) over scientific name (M = 2.82, SD = 1.29) for government regulations, t (423) = 10.88, p = .00. Comparing scientific name to wild caught or farmed, the results show that people were more interested in wild caught or farmed (M = 3.89, SD = 1.11) over scientific name (M = 2.83, SD = 1.28) for government regulations, t (423) = -16.02, p = .00. Comparing scientific name to method of fishing, the results show that people were more interested in method of fishing (M = 3.62, SD = 1.17) over scientific name (M = 2.81, SD = 1.28) for government regulations, t (393) = -10.79, p = .00.

In addition, the results show that people were more interested in the government regulating wild caught or farmed of the fish than the method of fishing and common name. Comparing wild caught or farmed to method of fishing, the results show that people were more interested in wild caught or farmed (M = 3.95, SD = 1.0) over method of fishing (M = 3.70, SD = 1.18) for government regulations, t (430) = 5.95, p = .00. Comparing common name to wild caught or farmed, the results show that people were more interested in wild caught (M = 3.93, SD = 1.11) over common name (M = 3.59, SD = 1.25) for government regulations, t (446) = -5.82, p = .00. The analysis showed that people were just as interested in the government regulating the common name as the method of fishing, t (415) = -.88, p = .378.

4.3.6 Age

For exploratory purposes, we investigated if the participant's age influenced how likely they were to eat fish. For this analysis, we classified our participants into younger (35 years and below) and older (36 years and up). A one way ANOVA analysis showed that older participants (M = 3.29; SD = 1.09) eat more fish than younger people (M = 2.99; SD = 1.034), F(1, 496) = 9.34 , p = .00.

In addition, we investigated if participant's age influenced how willing they were to report stop purchasing unsustainable fish. A one-way ANOVA analysis showed that younger participants (M = 2.14; SD = 1.04) are more willing to report that they would stop purchasing fish they found unsustainable than older participants (M = 2.47; SD = .86), $F(1, 443) = 13.29$, p = .00.

We also examined if participant's age influenced how likely participants were to report that they would stop purchasing red listed fish products. A one-way ANOVA showed that older participants (M = 3.62; SD = 1.29) reported being more willing to stop purchasing red listed fish products than younger participants (M = 3.09; SD = 1.09), $F(1, 378) = 17.47$, p = .00

We also examined if age influenced how eco-friendly participants reported being. A one-way ANOVA showed that older participants (M = 3.42; SD = 1.35) reported valuing eco-friendly seafood products more than younger participants (M = 2.93; SD = 1.15), $F(1, 411) = 14.86$, p = .00.

Chapter 5: Conclusions and Recommendations

This project examined the viability and effects of the Seafood Guide distributed by WWF Hong Kong. To do so we surveyed consumers on their awareness of both eco-friendly seafood products and the Seafood Guide. Additionally, we performed a naturalistic study to determine if supermarket labels contained common name, brand name, scientific name, source (i.e. origin) and whether the seafood was wild caught or farmed.

5.1 Seafood Guide

In the analysis of the survey, we found that 22% of the participants had seen the guide prior to taking the survey. This number represents little change from the findings of a June 2008 survey conducted by WWF Hong Kong to also determine consumer knowledge of the Seafood Guide. (Clarus Chu, personal communication, February 18, 2009).

We found 42% of the participants reported that the Seafood Guide was useful. More than twice as many respondents reported that the Seafood Guide would be useful than reported that the guide would not be useful when deciding what seafood to purchase.

When analyzing whether or not the guide changed their opinions on purchasing seafood listed in the avoid (red listed seafood) category, 43% of the participants believed the guide changed their opinions on purchasing seafood they should avoid. Only 23% of participants believed the guide did not change their opinions. This data shows that a larger amount of respondents reported the information presented by the Seafood Guide greatly affects opinions on red list fish. In these responses participants most frequently reported that the guide successfully conveyed information on how to purchase more sustainable seafood.

5.2 Labeling Information

Our research found all of the labels observed contained a common name, most had the origin, and a very small amount had "wild caught" or "farmed" on the label. To be used to the fullest, extent the Seafood Guide requires knowledge of the common name, the origin, and whether the seafood product is "wild caught" or "farmed". Most of the labels observed do not have all the required information indicating that the Seafood Guide cannot be used to make a sustainable purchasing decision. However, the guide frequently only needs the common name and source of the seafood product to allow for a sustainable purchase. This is because the guide rarely reports a distinction between wild caught and farmed varieties of the same species. Therefore, the Seafood Guide can be used in conjunction with labels containing only the common name and source. This shows that many labels do in fact contain enough information to make eco-friendly purchasing decisions. When requiring supermarket labeling information that includes only the common name and source, the list of supermarkets with sufficient labeling regulation greatly expands. C!ty'Super, JUSCO, Oliver's the Delicatessen, PARKnSHOP, Taste, and Great Food Hall all have labeling regulations that require common name and source to be on every seafood product in the store.

One limitation in these findings is that our observational study focused solely on the presentation of information on the seafood labels. A few concerns exist with currently presented information on labels, such as seafood being misrepresented through incorrect labeling (Jacquet & Pauly, 2007, p. 6). A similar problem is the lack of standardized common names of fish. If the label presented information that was incorrect for common name or any other misrepresentation it would interfere with the usage of the Seafood Guide, possibly resulting in the same seafood product having being sold under multiple names.

5.3 Eco-Friendliness

To determine the consumer awareness of sustainability, we asked consumers to rank the amount varying traits influenced their decision when purchasing seafood. Most participants reported that freshness and species were very important criteria when purchasing fish. They further reported that the eco-friendliness of seafood was a minor consideration and only moderately influenced seafood purchasing.

5.4 Interest in Government Regulated Labels

To investigate consumers' desire for information on seafood product labels we asked them to rank their interest in the government regulating certain labeling traits. Consumers reported a strong interest in regulations requiring the common name and whether the fish was wild caught or farmed. With this information, WWF Hong Kong then can advocate for the government, specifically the Food and Environmental Hygiene Department, to regulate the common names and fishing methods on the seafood labels. If these regulations were to be implemented, it would greatly expand the seafood retail locations where the Seafood Guide could be used in conjunction with labels to allow for sustainable purchasing decisions.

5.5 Target Demographic for the Seafood Guide

We further analyzed our data to look for a target demographic for future Seafood Guide distribution. Our results found a correlation between age and consuming a large amount of seafood. This indicates older consumers are important to convince as they eat a larger quantity of seafood.

Older demographics also positively correlated to reporting a willingness to purchase less seafood listed in the avoid category, indicating that targeting this demographic for future seafood

guide distribution would be effective. This is also suggested by the positive correlation between age and considering eco-friendliness when purchasing seafood. Providing the Seafood Guide to an older, more receptive participant, would more effectively promote a pro-sustainability change than by providing the guide to a less receptive younger person.

This finding represents a problem. Future conservation of Hong Kong seafood requires the younger population to eventually make sustainable purchasing decisions. However, based on the survey results it is indicated that the younger population is less receptive to the Seafood Guide; therefore further conservation efforts must be undertaken.

5.6 Further Research

Our results found that younger participants were less eco-friendly than older participants. We feel this is a question worth researching as younger Hong Kongers will be the focus of conservation programs many years from now. Additionally, encouraging sustainable purchasing in a younger person would be a longer lasting change than convincing an older person.

Our research also indicated that participants purchased more frequently from wet markets than supermarkets. Due to this we recommend a study determining methods to create and distribute a new wallet sized guide that can supplement information available in wet markets. This research would focus on modifying the current Seafood Guide if possible.

However, the possibility of mislabeled seafood labels remains. It would be advantageous to conduct further research by physically testing the DNA sequence of seafood sold in supermarkets. This would be accomplished by purchasing a large quantity of seafood and analyzing the DNA sequences. The DNA of the labeled fish would be compared against a known DNA sample. Once this data is collected researchers could determine if methods are needed to require consistent information on seafood labels.

Promoting MSC certified products would be another possible method of increasing amount and quality of labeled information. An additional study could research ways to increase market distribution of MSC certified products. MSC products represent a solution in this case as the consumer would only require the label to make a sustainable purchasing decision. A survey could be conducted to determine if Hong Kong residents would like more eco-friendly seafood or would be willing to pay a price premium for such a product sold in supermarkets. The purpose of this information would be to convince supermarkets to carry MSC certified seafood.

5.7 Conclusion

The results of our survey and observations show that consumers in Hong Kong moderately consider eco-friendliness when purchasing seafood products, placing more importance on other factors such as freshness and species. Additionally, supermarket labels do not provide enough information to make sustainable purchasing decisions when depending solely on labels for this information. The situation can be improved by the introduction of the Seafood Guide. Although seafood product labels were at times lacking information, there are supermarkets where sustainable purchasing decisions can be made with the application of the Seafood Guide. Therefore, we recommend that the Seafood Guide should be made as widely available as possible.

References

Agriculture and Rural Development: Sustainable Development Network. (2008). *The sunken billions: The economic justification for fisheries reform*. Washington, DC: The International Bank for Reconstruction and Development

Batte, M. T., Beaverson, J., & Hooker, N. (2003, December 11). Organic Food Labels: A Customer Intercept Survey of Central Ohio Food Shoppers. Retrieved November 10, 2008, from aede.osu.edu/resources/docs/pdf/DL17AFRV-ZRD8-OWNK-R8ETVPJMEKVM6E64.pdf

Buck, E.H. (1995). Overcapitalization in the U.S. commercial fishing industry. Washington, DC: National Council for Science and the Environment

Boulanger, K., DeMott, R., Nikitas, D., & Patchel, B. (2008). *The market viability of eco-fish in hong kong*

Dillard, J. & Pfau, M. (2002), *The persuasion handbook:Developments in theory and practice*. Thousand Oaks, CA: Sage.

Ecolabels make a difference. Retrieved November 29, 2008, from Marine Stewardship Council website: http://www.msc.org/healthy-oceans/our-solution/eco-labels-make-a-difference

Food Safety, Environmental Hygiene, Agriculture and Fisheries (2008). Retrieved November 28, 2008, from Bureau of East Asian and Pacific Affairs September 2008 Web site: http://www.state.gov/r/pa/ei/bgn/2747.htm

Grafton, R. Q., Arnason, R., Bjorndal, T., Campbell, D., Campbell, H F, Clark, C W, Connor, R., Dupont, D P, Hannesson, R., Hilborn, R., Kirkley, J E, Kompas, T., Lane, D E, Munro, G R, Pascoe, S., Squires, D., Steinshamn, S. I., Turris, B R, & Weninger, Q. (March 2006). Incentive-based approaches to sustainable fisheries. *Canadian Journal of Fisheries and Aquatic Sciences*, 63, p.699-710. Retrieved December 17, 2008, from Academic OneFile via Gale: http://find.galegroup.com/itx/start.do?prodId=AONE

Grankfist, G., Dahlstrand, U., & Biel, A. (2004). The Impact of Environmental Labelling on Consumer Preference: Negative vs. Positive Labels. *Journal of Consumer Policy*, 27, 213-230.

Greenpeace. (2005). *A recipe for disaster: Supermarkets' insatiable appetite for seafood.* Canonbury Villas, London: Author

Ho, Suk-Ching (2005).Evolution versus tradition in marketing systems: The hong kong food-retailing experience . Journal of Public Policy & Marketing. 24, 90-99.

Hong Kong considers ban on fishing trawlers. (2008, September 4). Retrieved February 16, 2009, from The Times of India Web site: http://timesofindia.indiatimes.com/articleshow/3443833.cms

Jacquet, J. L., & Pauly, D (2007). Trade Secrets: Renaming and Mislabeling of Seafood. Science Direct, Retrieved December 16, 2008, from http://www.sciencedirect.com/science?_ob=ArticleURL&_udi=B6VCD-4PK8BB3-2&_user=74021&_coverDate=05%2F31%2F2008&_rdoc=1&_fmt=&_orig=search&_sort=d&view=c&_acct=C000005878&_version=1&_urlVersion=0&_userid=74021&md5=4d20e2b3478a8a94db1cd4b96b6baa0a

Kyoto Danish Seine Fishery Federation snow crab and flathead flounder (two fisheries) (2008). Retrieved November 29, 2008, from Marine Stewardship Council <http://www.msc.org/track-a-fishery/certified/pacific/kyoto-danish-seine-fishery-federation-snow-crab-and-flathead-flounder/kyoto-danish-seine-fishery-federation-snow-crab-and-flathead-flounder

LeBlanc, J (2006).The global fish market and the need for multilateral fishing disciplines. *Economic Perspectives*. 8, 30-32.

Loureiro, M. L., & Lotade, J. (2005). Do Fair Trade and Eco-Labels in Coffee Wake Up the Consumer Conscience? *Ecological Economics*, 53, 129-138.

Niazi, S., Goldfinger, S., Stechbart, M., Reed, A., Rizk, S., Chu, C., Cornish, A., Fung, M., Ho, K., Tsang, A., Weeks, L., & Yu, W. (2008). Hong Kong Ecological Footprint Report 2008. 2-19.

Our Seafood Consumption. (2009). Retrieved January 12, 2009, from WWF Hong Kong website: http://www.wwf.org.hk/eng/conservation/seafood/B2.htm

Owens, Matthew C (2007). Sustainable Seafood Labeling: An Analysis of the Marine Stewardship Council. IR/PS CSR Case, #07-02, 6-25.

Promoting sustainable salmon fisheries development on Sakhalin Island, Russia. Retrieved December 14, 2008, from Sakhalin Salmon Initiative website: http://www.wildsalmoncenter.org/pdf/SSI_%20Sustainable_%20Fisheries_Engl.pdf

Seafood Choice Initiative. (2009a). Retrieved January 12, 2009, from WWF Hong Kong website: http://www.wwf.org.hk/eng/conservation/seafood/index.htm

Somma, A (2006).The environmental consequences and economic costs of depleting the oceans. *Economic Perspectives*. *8*, 14-16.

SOS - Save our seas campaign: Before and after. Retrieved December 14, 2008, from WWF Hong Kong Web site: http://www.wwf.org.hk/eng/conservation/sos/beforeandafter.php

Taste. (2009). Retrieved February 16, 2009, from A.S. Watson Web site: http://www.aswatson.com/eng/retail_fegm_221_taste.htm

Teisl, M. F., Roe, B., & Hicks, R. L. (2002). Can eco-labels tune a market? Evidence from dolphin-safe labeling. *Journal of Environmental Economics and Management, 43*(3), 339-359.

US Food and Drug Administration. (2009). Retrieved February 16, 2009, from US Food and Drug Administration Web site: http://ecfr.gpoaccess.gov/cgi/t/text/text-idx?c=ecfr&sid=ebf41b28ca63f43546dd9b6bf3f20330&rgn=div5&view=text&node=21:2.0.1.1.2&idno=21

Warren-Rhodes, Kimberley, & Koenig, Albert (2001). Ecosystem Appropriation by Hong Kong and its Implications for Sustainable Development. *Ecological Economics*. 39, 347-359.

Wessells, C. R., Johnston, R. J., & Donath, H. (1999). Assessing Consumer Preference for Ecolabeled Seafood: The Influence of Species, Certifier, and Household Attributes. American Journal of Agricultural Economics, 81, 1084-1089.

Wherever there is fishing, there is bycatch (2008, September 11). Retrieved December 14, 2008, from WWF website: http://www.panda.org/about_wwf/what_we_do/marine/problems/bycatch/issue/index.cfm

Worm, B., Barbier, E.B., Beaumont, N., Duffy J.E., Folke, C., Halpern, B.S., Jackson, J. B. C., Lotze, H.K., Micheli, F., Palumbi, S.R., Sala, E., Selkoe, K.A., Stachowicz, J.J., & Watson, R. (2006). Impacts of biodiversity loss on ocean ecosystem. *Science Magazine*. *314*, 787-790.

Zabel, R.W., Harvey C.J., Katz S.L., Good T.P., & Levin P.S. (2003). Ecologically sustainable yield. *American Scientist*, *91*, Retrieved Dec 14, 2008, from http://www.americanscientist.org/issues/feature/ecologically-sustainable-yield/1

Appendix A: Background of WWF

The World Wide Fund for Nature (WWF), previously the World Wildlife Fund, was established in 1961 as a charitable trust. As shown in their mission statement, the WWF's purpose is "to stop the degradation of the planet's natural environment and to build a future in which humans live in harmony with nature" ("WWF Hong Kong", 2008).

We will be working with the Conservation Department of World Wide Fund for Nature Hong Kong (WWF Hong Kong). Created in 1981, WWF Hong Kong is an autonomous branch of the WWF. Since its creation it has focused on conserving biological diversity, ensuring the responsible use of renewable resources, and reducing pollution in Hong Kong. This is reflected in WWF Hong Kong's mission statement as they aim to [ensure] "the use of renewable resources is sustainable" ("WWF Hong Kong", 2008).

Overfishing and depletion of marine life are major threats to biological diversity in Hong Kong. In response to this WWF Hong Kong joined in the Seafood Choice Initiative in 2007. This program was launched by WWF in 2001 in response to the unsustainable fishing practices that were pushing the ecosystems to the brink of disaster. The three main objectives of this program are to provide credible information on the environmental impact of consuming seafood commonly available in Hong Kong and South China, to influence behavior of consumers and the seafood industry towards sustainable consumption, and to promote Marine Stewardship Council (MSC), an independent, non-profit global organization that certifies fisheries using sustainable practices ("Seafood Choice Initiative", 2009).

WWF Hong Kong requested this project, "Seafood Sustainability Survey", to investigate how supermarkets present information to consumers concerning seafood labels, how consumers view sustainable products, and how aware consumers are of the Seafood Choice Guide. This

project aims to supplement the work started by the Seafood Choice Initiative project by determining methods to change customer seafood demand. A survey was distributed to a wide consumer base to determine what labeling information will promote the purchase of sustainable seafood. The survey is intended to collect the information necessary to educate the general public on the dangers of overfishing.

As a result of the project a program could be constructed to help educate the general public of Hong Kong. This would be accomplished by the education department of WWF Hong Kong. This department has reached out to over 140,000 people through their programs. Additionally, 18.3% of total budget is allocated toward "community education." These resources could be used to educate consumers and to greatly improve the current state of marine ecosystems and fishing practices.

WWF Hong Kong provided us with cultural information that we could not otherwise obtain and also helped create the seafood survey. The Hong Kong office of the WWF provided useful and important information regarding Hong Kong's culture, supermarkets, as well as their consumers and retailers. Volunteer assistance came from some of the over 4,000 employees in the WWF community and from the 4.7 million supporters. These people helped by translating our survey, aiding in localization, as well as assisting in the distribution of the survey.

Appendix B: Cost/Benefit Analysis

The aim of our project is to examine the seafood sustainability information supermarkets are currently providing to the average Hong Kong consumer. We surveyed these supermarkets to determine the overall process used to select the provided seafood and surveyed consumers to determine their current awareness of the sustainability of the seafood they buy. The end goal was to use this information to determine if supermarkets are making sustainability of seafood evident at point of sale. We will analyzed both the overall impact of a successfully collecting this data and method chosen to determine if we should proceed.

This information could be used to increase awareness of the overfishing issue at the point of sale. A previous IQP determined 84% Hong Kong consumers are willing to pay a 20%-40% premium for eco-friendly fish (Boulanger et al., 2008, p. 38). This shows there may be a market opportunity for seafood labeled as sustainably fished.

Marketing fish as sustainable would serve two purposes. It increases profit margin for sustainable fishermen while removing some demand for unsustainable fish. Fishermen would be able to charge more for their product after adhering to sustainability regulations, increasing profit margins and giving them a strong competitive advantage.

The process of sustainable fishing would further serve to increase profits because of other reasons as well. It calls for a lower overall take, allowing the fish population to grow older before being caught. This process both increases the size of the fish and decreases the cost of catching it. Combining this lower operating cost with being able to charge more for the fish leads to a much larger profit margin.

However, sustainable fishing also calls for less fishermen overall. This means many fishermen would need to find new jobs. Recent statistics show that over 12,000 Hong Kong

citizens are involved in the fishing industry, some portion of which would need to give up their current occupation ("Hong Kong considers ban", 2008). These people would need to radically change their work patterns, either by totally changing their current fishing methods or by changing jobs.

A secondary cost is the monetary cost of conducting surveys, which is minimal. We would be using public land to conduct surveys, meaning they cost nothing to use. The bigger cost is the information gathering method, whether it is paper or electronic.

These small costs seem trivial when compared to the benefits of the project. Reaching our goal would hurt a portion of current fishermen, but their numbers pale in comparison to that of the overall Hong Kong population of 6,960,000 ("Bureau of East Asian", 2008). Increasing profit margin would allow Hong Kong to tap into some of the $50 billion the worldwide fishing industry is wasting every year, while producing a better product ("Sunken Billions", 2008, p. 31). We therefore proceeded with the survey.

Appendix C: MSC Chain of Custody

MSC - Marine Stewardship Council

MSC Chain of Custody standard

August
2005
Version 2

Committees responsible for this Standard

This standard is intended to be used on a global basis by MSC accredited third party certifiers to undertake the certification of chain of custody verification for fish and fish products originating from fisheries certified to the MSC Principles and Criteria for well managed fisheries.

This standard is intended to be a living document and will be reviewed from time to time.

This standard was prepared by the MSC Executive and first published as a draft document in December 1999. The MSC Technical Advisory Board is the committee with the overall authority for the issuing and amendment of this manual.

Amendments Issued Since Publication

Version	Date	Description of Amendment
Draft placed in public domain December 1999		
1	August 2000	Issue 1 – Formal issue
2	August 2005	Major review of requirements

Definitions

For all definitions refer to ISO 9000:2000 and MSC Definitions

Abbreviations Used

CoC: Chain of Custody

References

MSC Principles and Criteria
MSC Fisheries Certification Methodology
MSC Chain of Custody Certification Methodology
MSC Definitions
ISO 9000:2000

Quality Management Systems – Fundamentals and Vocabulary
ISO 9001:2000
Quality Management Systems – Requirements
Codex Alimentarius Recommended International Code of Practice
General Principles of Food Hygiene

Foreword

The objective of chain of custody certification is to provide an assurance for suppliers to demonstrate and claim that products originate from an MSC certified fishery and minimise the risk of public confusion between fish and fish products that have not.

To achieve this, a full product traceability system is required so products can be traced from their suppliers and tracked to their buyers.

This standard is designed to provide a high level of confidence that products carrying the MSC Logo originate from an MSC Certified Fishery while not imposing unreasonable compliance costs on the industry.

The scope of this standard is the requirement for maintaining the chain of custody for products from fisheries certified to the MSC Standard. It does not cover issues such as food safety or quality.

MSC encourages all organisations to implement and maintain the appropriate food safety and quality programmes based on international models such as the Codex Alimentarius Recommended International Code of Practice General Principles of Food Hygiene, including HACCP, and / or ISO 9001:2000, Quality Management Systems – Requirements.

Section 1: Control system

1.1 The organisation shall have a management system which addresses all the sections below.

1.2 Unless specifically required in later sections, the management system does not have to be documented, unless the absence of documentation will create a risk to determining the certified status of the product.

1.3 The organisation shall be responsible for any work conducted by its subcontractors and shall retain full control over work performed by them and be able to demonstrate that traceability has been maintained and the requirements of this standard are met.

> Note: A management system is defined as a set of interrelated or interacting elements to establish policy and objectives and achieve those objectives (from ISO 9000:2000).

Section 2: Confirmation of inputs

2.1 The organisation shall operate a system for assuring that where specified, received products are certified as coming from a fishery certified to the MSC Standard or a CoC certified supplier.

2.2 A record of all MSC certified inputs received shall be maintained, showing the name of the supplier, their MSC CoC certificate number, evidence of certificate validity and sufficient other details to allow the tracing of those inputs back to their supplier if required.

Section 3: Separation and/or demarcation of certified and non-certified fish inputs

3.1 The organisation shall operate a system to ensure that when certified fish inputs are received they are clearly identified at all stages of their storage, processing, packaging, labelling or handling.

3.2 Certified fish inputs shall be kept separate from non-certified fish inputs throughout processing or manufacturing. This may be achieved by:

3.2.1 physical separation of certified and non-certified production lines;

3.2.2 temporal separation of certified and non-certified production runs;

3.3 Certified and non-certified fish inputs shall not be mixed.

3.4 Flavourings[3] made of non-certified fish inputs may be used where flavourings made from certified fish inputs are not commercially available2. Should non-certified fish flavourings be used, the maximum amount of fish flavouring that is allowed is 2% of the total fish content of the finished product. The method of calculating the percentages of ingredients is set out in Annex 1 of this Standard.

3.5 Where non-certified fish flavourings are used, the product name shall not refer to the name of the non-certified species.

3.6 Data shall be recorded to allow confirmation of the volumes and/or weights of certified and non-certified fish inputs and outputs over a specified production period.

Section 4: Secure product labeling

4.1 The organisation shall operate a secure system for the production, storage and application of product labels bearing a claim of MSC certified status or the MSC Logo, and will ensure that only MSC certified product is labelled as such.

Section 5: Identification of certified outputs

5.1 Certified fish and fish products shall be labelled or otherwise be identified (including the organisation's Chain of Custody Certificate number) in a manner that ensures traceability is maintained during packaging, storage, handling and delivery.

5.2 The organisation shall operate a system that allows any product or batch of products sold by the organisation as certified to be tracked to a sales invoice issued by the organisation.

---

[3] flavouring: an input added to food primarily for the savour it imparts 2 commercially available: the ability to obtain a production input in the required form, quality and quantity

5.3 The organisation shall operate a documented system to ensure that certified fish and fish products have information related to the product that allows full tracing and tracking of the product, including:

5.3.1 a description of the product(s) and, where appropriate, batch identifiers;

5.3.2 a record of the volume/quantity of the product(s) and to whom it was sold or shipped and the date of shipment or sale.

Section 6: Record keeping

6.1 The organisation shall maintain appropriate records of all inputs, processing and outputs of certified fish and fish products.

6.2 The records shall be sufficient to trace back from any given certified output to the certified inputs.

6.3 The records shall be sufficient to allow the conversion rates for the manufacture of certified outputs from given certified inputs over any given period to be determined.

6.4 Records shall be maintained for a minimum of three years.

ANNEX 1: Calculation of percentage of certified and non-certified fish inputs (for flavouring purposes)

The percentage of non-certified fish flavouring ingredients in a product carrying the MSC label shall be calculated by:

a) Dividing the total net weight (excluding water and salt) of noncertified fish flavouring ingredients by the total weight (excluding water and salt) of the combined certified fish and non-certified fish flavourings in the finished product; or

b) Dividing the fluid volume of all non-certified fish flavouring ingredients (excluding water and salt) by the fluid volume of the combined certified fish and non-certified fish flavourings in the finished product (excluding water and salt) if the product and ingredients are liquid. If the liquid product is identified as being reconstituted from concentrates, the calculation should be made based on singlestrength concentrations of the ingredients and finished product;

c) For products containing non-certified fish flavouring ingredients in both solid and liquid form, dividing the combined weight of the noncertified fish flavouring's solid ingredients and the weight of the liquid ingredients (excluding water and salt) by the total weight (excluding water and salt) of the combined certified fish and non-certified fish flavourings in the finished product;

d) The percentage of all non-certified flavouring ingredients in a seafood product shall be rounded up to the nearest whole number;

e) The percentage shall be determined by the organisation who affixes the MSC label on the consumer package. The organisation may use information provided by other suppliers in determining the percentage.

Products with multiple ingredients shall not include certified and non-certified forms of the same flavouring ingredient. They shall not be produced using noncertified fish flavouring ingredients if certified fish flavouring ingredients are commercially available.

MSC Chain of Custody standard Version 2, August 2005

http://www.msc.org/documents/msc-standards/MSC_Chain_of_Custody_Standard.doc

Appendix D: Consumer Survey Locations

The following were the targeted locations from which the surveys were administered:

1. The Landmark, Central & Western
2. Hong Kong Park, Central & Western
3. Wan Chai
4. Elements Mall, Yau Tsim Mong
5. Hong Kong Polytechnic University, Hung Hom, Kowloon City
6. Sunshine City, Sha Tin
7. Ma On Shan Park, Sha Tin
8. Belcher Bay Park, Cental & Western
9. Tsing Yi Promenade, Tsuen Wan
10. Wetland Park, Yuen Long
11. Tuen Mun Park, Tuen Mun
12. Stanely, Southern
13. Aberdeen, Southern
14. North Point, Eastern
15. Lok Fu Park, Lok Fu

Appendix E: Consumer Survey

We are Worcester Polytechnic Institute students and we are conducting the following interview for a school project. Thank you for your time and help.
我們是來自 Worcester Polytechnic Institute 的學生，現正進行一項問卷調查。盼望您能撥冗接受此項調查，謝謝您的幫忙。

Instructions: This survey investigates fish purchasing habits. Please read over each question and provide an answer by checking the box or circling the number that best represents your response. This survey is completely anonymous, so please answer each question as openly as possible.
指引： 這次問卷調查主要目的是研究市民購買魚類的習慣。請仔細閱讀每條問題，並提供最能代表您意見的答案或圈出其數字。是次調查並不會公開被訪者的姓名，請放心作答。

1.	**Do you eat fish? 您有食用魚類的習慣嗎？**					
	☐ Yes 有 ☐ Depends on what type of fish 視乎魚類品種而定 ☐ No 沒有					
2.	**Do you like eating fish? 您喜歡吃魚嗎？**					
	☐ Yes, I like eating fish 是，我喜歡吃魚 ☐ Neutral 一般 ☐ No, I dislike eating fish (please skip to question 4) 不，我不喜歡吃魚（請跳到問題 4） ☐ Depends on species (please specify): 視乎魚類品種而定（請註明）: ☐ Don't know/Hard to say 不知道/很難說					
3.	**How often do you consume fish? 您是否經常吃魚？**					
	☐ <1 Time Per Month 一個月少於 1 次	☐ 1-3 Times Per Month 一個月 1 至 3 次	☐ 1-2 Times Per Week 一星期 1 至 2 次	☐ 3-4 Times Per Week 一星期 3 至 4 次	☐ 5 Times Per Week or More 一星期 5 次以上	
4.	**When purchasing fish, where do you buy most often? 您最常到何處購買魚類？**					
	Supermarkets 超級市場	1 Infrequently 不常	2	3	4	5 Frequently 經常
	Wet Markets 街市	1 Infrequently 不常	2	3	4	5 Frequently 經常
	Restaurants 餐廳	1 Infrequently 不常	2	3	4	5 Frequently 經常
	Other 其他:	1 Infrequently 不常	2	3	4	5 Frequently 經常
5.	**How much do you typically spend on fish products (in $HKD) each time? Please circle the most correct amount. 您每次購買魚類產品，通常花多少錢（港元）？請圈出最接近的金額。**					
	Supermarkets 超級市場	$20 Below 低於	$40	$60	$80	$100 Above 高於
	Wet Markets 街市	$20 Below 低於	$40	$60	$80	$100 Above 高於
	Restaurants 餐廳	$20 Below 低於	$40	$60	$80	$100 Above 高於
	Other: 其他	$20 Below 低於	$40	$60	$80	$100 Above 高於

6.	**Please indicate the extent to which the following factors are taken into consideration when purchasing seafood. 您購買海鮮時，會考慮下列哪項因素? 請圈出最合適的答案。**	
	Price 價錢	1 2 3 4 5 Strongly Disagree 強烈反對 Agree 同意
	Freshness 新鮮	1 2 3 4 5 Strongly Disagree 強烈反對 Agree 同意
	Size 大小	1 2 3 4 5 Strongly Disagree 強烈反對 Agree 同意
	Species 種類	1 2 3 4 5 Strongly Disagree 強烈反對 Agree 同意
	Sales Promotion 銷售推廣	1 2 3 4 5 Strongly Disagree 強烈反對 Agree 同意
	Eco-Friendly 環保	1 2 3 4 5 Strongly Disagree 強烈反對 Agree 同意
7.	**Please check the seafood products you most frequently purchase/consume (check all that apply). 請選出您最常購買/食用的海鮮產品（可選多於一項）。**	
	☐ Salmon 三文魚 ☐ Shrimp 蝦 ☐ Sea bass 鱸魚 ☐ Ling fish 青衣 ☐ Black cod 銀鱈魚	☐Squid 魷魚 ☐Orange roughy 金獅魚 ☐Mud crab 青蟹 ☐Hairtail 牙帶 ☐Red crab 紅蟹
	☐Golden threadfin bream 紅衫魚 ☐Yellowfin sea bream 黃腳魚立 ☐Unicorn leather jacket 牛魨	☐Yellow croaker 黃花魚 ☐Bartail flathead 牛鰍 ☐Duskytail grouper 芝麻斑 ☐Pomfret 倉魚
	☐Star Snapper 石蚌 ☐Mangrove snapper 紅魶 ☐Leopard coral grouper 東星斑	
8.	**Do you know the origin (e.g., where the fish was caught) of the seafood you bought? 您知道所購買的海鮮的來源地嗎（例如，該條鮮魚於哪裡捕獲）？**	
	☐ Yes 知道 ☐ Sometimes 有時知道 ☐ No 不知道	
9.	**Do you know if the seafood you buy is wild-caught or farmed? 您知道所購買的海鮮是野生或是來自養殖場嗎？**	
	☐ Yes 知道 ☐ Sometimes 有時知道 ☐ No 不知道	
10.	**If you found out a seafood product you marked in question 7 was being unsustainably sourced, would it affect your purchasing decision? 如果您發現自己常購買的海鮮產品(問題 7)並非以可持續的方式捕撈或養殖，會否影響您的購買決定嗎？**	
	1 2 3 4 5 Completely Stop Purchasing 完全停止購買 Increased Purchasing 增加購買	
11.	**To what extent are you interested in the government regulating that labels of seafood products have the following information: 如政府立例管制海鮮產品的標籤，您最想知道下列哪項資料呢：**	
	Common Name 俗名	1 2 3 4 5 Not Interested 不感興趣 Very Interested 極感興趣
	Scientific Name 學名	1 2 3 4 5 Not Interested 不感興趣 Very Interested 極感興趣
	Seafood Source, Wild Caught or Farmed 海鮮來源，野生捕獲或養殖	1 2 3 4 5 Not Interested 不感興趣 Very Interested 極感興趣
	Fishing or Harvesting Method 捕魚或養殖方法	1 2 3 4 5 Not Interested 不感興趣 Very Interested 極感興趣

For the following questions we are assessing public awareness of the "Seafood Guide" produced by WWF Hong Kong. Seafood categorized as "Avoid-Red" are overfished, caught or farmed in ecologically unfriendly ways.
下列的問題，用作評估公眾對世界自然基金會香港分會《海鮮選擇指引》的認識之用。指引內被列為「避免－紅色」的海鮮，是遭過度捕撈，或是以破壞生態的方式捕捉或養殖。

12.	**Have you ever heard of the "Seafood Guide" produced by WWF Hong Kong?** **您知道世界自然基金會香港分會推出了「海鮮選擇指引」嗎？**
	☐ Yes 知道 ☐ No 不知道
13.	**If so, to what extent has this guide affected your purchasing habits?** **如果您有翻閱過該指引，它有否影響您的購物習慣？**
	1 2 3 4 5 Not At All 完全沒有 Very Much 影響很多
14.	**Does this guide seem useful to you? 這指引合用嗎？**
	1 2 3 4 5 Not At All 完全不合用 Very Much 非常合用
15.	**Does this guide change your opinions on purchasing fish listed as red?** **這指引會否對您購買「避免」類別品種的決定造成什麼影響？**
	1 2 3 4 5 Not At All 完全沒有 Very Much 影響很多
Background 背景資料	
1.	**Gender 性別**
	☐ Female 女 ☐ Male 男
2.	**Age 年齡**
	☐ 18 or below ☐ 19-25 ☐ 26-35 ☐ 36-45 ☐ 46 or up ☐ 18 歲或以下 ☐ 19 至 25 歲 ☐ 26 至 35 歲 ☐ 36 至 45 歲 ☐ 46 歲或以上
3.	**Are you a resident of Hong Kong? 你是香港居民嗎？**
	☐ Yes 是 ☐ No (Please skip to question 5) 否（請跳至問題 5）
4.	**Please indicate how long you have lived in Hong Kong in weeks, months, or years.** **請說明你在香港居住的時間 (可以星期、月或年計算)。**

5.	**Please estimate how long you are planning to stay in Hong Kong in weeks, months, or years.** **請估計您在香港逗留的時間 (可以星期、月或年計算)。**
6.	**Which district do you currently live in? 你現居於哪一區？**
	☐ Southern 南區 ☐ Eastern 東區 ☐ Kwai Tsing 葵青 ☐ Kowloon City 九龍城 ☐ Outlaying Islands 離島 ☐ Kwun Tong 觀塘 ☐ North 北區 ☐ Sai Kung 西貢 ☐ Sham Shui Po 深水埗 ☐ Sha Tin 沙田 ☐ Central & Western 中西區 ☐ Tai Po 大埔 ☐ Tsuen Wan 荃灣 ☐ Tuen Mun 屯門 ☐ Wan Chai 灣仔 ☐ Wong Tai Sin 黃大仙 ☐ Yau Tsim Mong 油尖旺 ☐ Yuen Long 元朗 ☐ Other : 其他:
7.	**Please indicate your occupation below (e.g., Sales Clerk). 請列明您的工作行業（例如，銷售員）。**
8.	**Are you the primary food buyer in your household? 你是家中主要購買糧食的成員嗎？**
	☐ Yes 是 ☐ No 否
9.	**How many people in your household? 您共有多少家庭成員？**
	☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5+
10.	**Education Level 教育水平**
	☐ Primary 小學 ☐ Secondary or Post-Secondary 中學或專上 ☐ University or above 大學或以上

Thank you for taking this survey.
感謝您接受這次問卷調查。

Appendix F: Consumer Survey Statistics

Q1	Do you eat fish?	Number (N=526)	Percent
	Yes	413	79%
	Sometimes	92	17%
	No	21	4%

Q2	Do you like eating fish?	Number (N=526)	Percent
	Yes, I ike eating fish	283	54%
	Neutral	177	34%
	No, I dislike fish.	30	6%
	Depends on the species	33	6%
	Don't know/Hard to say	3	<1%

Q3	How often do you consume fish?	Number (N=512)	Percent
	< 1 Time Per Month	34	7%
	1-3 Times Per Month	109	21%
	1-2 Times Per Week	191	37%
	3-4 Times Per Week	121	24%
	5 Times Per Week or More	57	11%

Q4	When purchasing fish, where do you buy most often?	Number	Percent
	Supermarkets	**Total: 401**	
	1	144	36%
	2	85	21%
	3	85	21%
	4	45	11%
	5	42	11%
	Wet Markets	**Total: 471**	
	1	97	21%
	2	33	7%
	3	80	17%
	4	83	18%
	5	178	38%
	Restaurants	**Total: 400**	

	1	127	32%
	2	69	17%
	3	103	26%
	4	63	16%
	5	38	10%
	Other	**Total: 194**	
	1	139	72%
	2	22	11%
	3	20	10%
	4	8	4%
	5	5	3%

Q5	**How much do you typically spend on fish products (in $HKD) each time? Please indicate the most correct amount.**	**Number**	**Percent**
	Supermarkets	**Total: 410**	
	1	104	25%
	2	168	41%
	3	77	19%
	4	29	7%
	5	32	8%
	Wet Markets	**Total: 467**	
	1	114	24%
	2	171	37%
	3	91	20%
	4	51	11%
	5	39	8%
	Restaurants	**Total: 392**	
	1	72	18%
	2	76	19%
	3	73	19%
	4	66	17%
	5	105	27%
	Other	**Total: 150**	

	1	90	60%
	2	30	20%
	3	15	10%
	4	8	5%
	5	7	5%

Q6	Please indicate the extent to which the following factors are taken into consideration when purchasing seafood.	Number	Percent
	Price	**Total: 443**	
	1	16	3%
	2	30	7%
	3	176	40%
	4	114	26%
	5	107	24%
	Freshness	**Total: 479**	
	1	9	2%
	2	11	2%
	3	31	7%
	4	111	23%
	5	317	66%
	Size	**Total: 428**	
	1	21	5%
	2	44	10%
	3	201	47%
	4	115	27%
	5	47	11%
	Species	**Total: 434**	
	1	8	2%
	2	33	7%
	3	120	28%
	4	144	33%
	5	129	30%
	Sales Promotion	**Total: 414**	

	1	110	27%
	2	115	28%
	3	121	29%
	4	46	11%
	5	22	5%
	Eco-Friendly	**Total: 417**	
	1	54	13%
	2	72	17%
	3	146	35%
	4	72	17%
	5	73	18%

Q7	**Please check the seafood products you most frequently purchase/consume (check all that apply).**	**Number out of 530**	**Percent**
	Salmon	308	58%
	Shrimp	313	59%
	Sea Bass	87	16%
	Ling fish	23	4%
	Black cod	106	20%
	Squid	134	25%
	Orange roughy	9	2%
	Mud crab	45	9%
	Hairtail	23	4%
	Red crab	77	15%
	Golden threadfin bream	186	35%
	Yellowfin sea bream	77	15%
	Unicorn leather jacket	2	<1%
	Yellow croaker	162	31%
	Bartail flathead	22	4%
	Duskytail grouper	37	7%

	Pomfret	160	30%
	Star snapper	43	8%
	Mangrove snapper	59	11%
	Leopard coral trout	82	16%

Q8	Do you know the origin (e.g., where the fish was caught) of the seafood you bought?	Number (N=518)	Percent
	Yes	41	8%
	Sometimes	254	49%
	No	223	43%

Q9	Do you know if the seafood you buy is wild-caught or farmed?	Number (N=518)	Percent
	Yes	41	8%
	Sometimes	254	49%
	No	223	43%

Q10	If you found out a seafood product you marked in question 7 was being unsustainably sourced, would it affect your purchasing decision?	Number (N = 449)	Percent
	1 (completely stop purchasing)	95	21%
	2	145	32%
	3	175	39%
	4	25	6%
	5 (increased purchasing)	9	2%

Q11	To what extent are you interested in the government regulating that labels of seafood products have the following information:	Number	Percent
	Common Name	**Total: 459**	
	1	37	8%
	2	55	12%
	3	112	24%
	4	109	24%
	5	146	32%
	Scientific Name	**Total: 435**	
	1	84	19%

	2	106	24%
	3	123	28%
	4	59	14%
	5	63	15%
	Seafood Source, Wild Caught or Farmed	**Total: 476**	
	1	17	4%
	2	34	7%
	3	96	20%
	4	135	28%
	5	194	41%
	Fishing or Harvesting Method	**Total: 436**	
	1	25	6%
	2	48	11%
	3	106	24%
	4	116	27%
	5	141	32%

Q12	**Have you ever heard of the "Seafood Guide" produced by WWF Hong Kong?**	**Number (N=515)**	**Percent**
	Yes	114	22%
	No	401	78%

Q13	**If so, to what extent has this guide affected your purchasing habits?**	**Number (N= 360)**	**Percent**
	1	66	18%
	2	41	11%
	3	135	38%
	4	81	23%
	5	37	10%

Q14	**Does this guide seem useful to you?**	**Number (N= 379)**	**Percent**
	1	32	8%
	2	30	8%
	3	158	42%
	4	93	25%

	5	66	17%

Q15	Does this guide change your opinion about buying fish listed as red?	Number (N= 384)	Percent
	1	38	10%
	2	51	13%
	3	129	34%
	4	99	26%
	5	67	17%

Q1B	Gender	Number (N=522)	Percent
	Female	288	55%
	Male	233	45%

Q2B	Age	Number (N= 516)	Percent
	1 [18 and below]	52	10%
	2 [19-25]	137	27%
	3 [26-35]	136	26%
	4 [36-45]	94	18%
	5 [45 and up]	97	19%

Q3B	Are you a resident of Hong Kong?	Number (N= 508)	Percent
	Yes	444	88%
	No	61	12%

Q4B	Time Lived in Hong Kong?	Number (N= 371)	Percent
	Chinese	2	0.5%
	0-5 years	56	15%
	6-10 years	24	7%
	11-15	31	8%
	16-20	51	14%
	21-25	48	13%
	26-30	31	8%
	31-40	34	9%
	41-50	29	8%

	51-60	9	2%
	60 +	11	3%
	Lifetime/forever	38	10%
	Tourist (weeks)	4	1%
	Many	2	0.5%
	Unsure	1	0.3%

Q5B	Expected Stay in Hong Kong?	Number (N= 207)	Percent
	Chinese	1	0.5%
	0-5 years	61	30%
	6-10 years	12	6%
	11-15	9	4%
	16-20	3	1%
	21-25	5	2%
	26-30	7	3%
	31-40	5	2%
	41-50	1	0.5%
	51-60	2	1%
	60 +	1	0.5%
	Lifetime/forever	74	36%
	Tourist (weeks)	19	9%
	Many	1	0.5%
	Unsure	4	2%

Q6B	District	Number (N= 479)	Percent
	Southern	49	10%
	North	15	3%
	Tsuen Wan	13	3%
	Eastern	52	10%
	Sai Kung	19	4%
	Tuen Mun	38	7%
	Kwai Tsing	17	3%
	Sham Shui Po	10	2%
	Wan Chai	19	4%

	Kowloon City	44	8%
	Sha Tin	53	10%
	Wong Tai Sin	28	5%
	Outlaying Islands	10	2%
	Central/Western	40	8%
	Yau Tsim Mong	13	3%
	Kwun Tong	24	5%
	Tai Po	13	3%
	Yuen Long	19	4%

Q6B	Profession	Number (N= 427)	Percent
1	Student	114	27%
2	Home	43	10%
3	Education	28	7%
4	Volunteer	20	5%
5	Office Worker	15	4%
6	Protection	6	1%
7	Aviation	3	1%
8	Medical Field	9	2%
9	Government	6	1%
10	Banking/Accountant	13	3%
11	Finance/Stock Broker	6	1%
12	Lawyer	3	1%
13	Technology	8	2%
14	Manager	9	2%
15	CEO/Director	5	1%
16	Tourism	3	1%
17	Retired	16	4%
18	Administrator	8	2%
19	Clerk	20	5%

20	Sales	27	6%
22	Telecommunications	2	0.5%
23	Engineer	14	3%
24	Service Industry	14	3%
25	Unemployed	2	<1%
26	Catering	2	<1%
27	Self-employed	5	1%
28	Construction	3	1%
29	Interior Designer	4	1%
30	Survey Interviewer	1	<1%
31	Marketing	2	<1%
32	Trading	2	<1%
33	Media	2	<1%
34	Social Worker	1	<1%
35	Pet Groomer	1	<1%
36	Analyst	1	<1%
37	Insurance	1	<1%
38	Beautician	1	<1%
39	Consultant	2	<1%
40	Assistant	2	<1%

Q8B	**Are you the primary food buyer in your household?**	**Number (N=510)**	**Percent**
	Yes	187	37%
	No	323	63%

Q9B	**How many people are in your household?**	**Number (N=509)**	**Percent**
	1	35	7%
	2	78	15%
	3	131	26%
	4	161	32%
	5 +	104	20%

Q10B	Education Level	Number (N=509)	Percent
	Primary	30	6%
	Secondary/Post-Secondary	190	37%
	University or Above	289	57%

Appendix G: Label Information Observation Locations

JUSCO:

LG- 1, 2, 3 & 5 on Lower Ground Level, Millennium City 5, No. 418 Kwun Tong Road, Kowloon

Wellcome:

Unit 401 Level 4, Dragon Centre, 37K Yen Chow Street, Sham Shui Po, Kowloon

C!ty'Super:

IFC Mall, Level One, Shops 1041-1049, Central, Hong Kong
Times Square Basement One, Causeway Bay, Hong Kong

ThreeSixty:

3/F and 4/F, The Landmark, Central, Hong Kong

Oliver's the Delicatessen:

Shop 233, Prince's Building, 10 Chater Road, Central, Hong Kong

PARKnSHOP:

Aberdeen Centre, Ground Floor, Site 1, Aberdeen Centre, 19-23 Nam Ning Street, Aberdeen, Hong Kong

Taste:

Shop 201-203 , 2/F, Stanley Plaza, Ma Hang, Stanley, Hong Kong

Great Food Hall:

Basement, Two Pacific Place, Queensway, Hong Kong

SOGO:

555 Hennessy Road, Causeway Bay, Hong Kong

Appendix H: Label Information

LIV – Live Fish, FRH – Fresh, PFH – Prepackaged Fresh, FZN – Prepackaged Frozen, CAN - Canned

Note: Parenthetic information is for clarification and was not included on the label. Red text is either incorrect or unconfirmed.

	Common Name/Product Name	*Scientific name*	Packing Type	Brand	Source/Country of Origin	Wild-Caught/Farmed	Eco-label
1	Yellowfin Seabream	*Acanthopagrus latus*	PFH	Taste	China		
2	Black sea bream	*Acanthopagrus schlegeli*	LIV	Taste	China		
3	Yellowfin Seabream	*Acanthopagrus latus*	FRH	Taste	China		
4	Blackfish Sea Cucumber	*Actinopyga miliaris*	FZN	PARKnSHOP	Australia		
5	Blackfish Sea Cucumber	*Actinopyga miliaris*	FZN	Taste	Australia		
6	Balckfish Sea Cucumber	*Actinopyga miliaris (can't find this)*	FZN	Taste	Australia		
7	Unicorn Leather Jacket	*Aluterus monoceros*	PFH	PARKnSHOP	Phillippes		
8	Unicorn Leather Jacket	*Aluterus monooeros*	FRH	Taste	China		
9	Scallop	*Amusium species(incorrectly written - this was on the label)*	FRH	Great Food Hall	Australia		
10	Japanese Eel	*Anguilla japonica*	PFH	PARKnSHOP	China		
11	Japanese Eel	*Anguilla japonica*	PFH	Taste	China		
12	Japanese Eel	*Anguilla japonica*	LIV	PARKnSHOP	China		
13	Japanese Eel	*Anguillu japonioa*	FZN	Taste	China		
14	Green Carp	*Anharyneodon idella (can't find this)*	FRH	Taste	China		
15	Stable fish	*Anoplopma fimbria*	FRH	Great Food Hall	Canada		
16	Big Head Carp	*Aristichthys nobilis*	FRH	Taste	China		
17	Big Head Carp	*Aristichthys nobilis*	PFH	Taste	China		
18	Bighead Carp	*Aristichthys nobilis*	PFH	PARKnSHOP	China		
19	Arrowtooth Flounder	*Atheresthes stomias*	FZN	Matlaw's	USA, Canada		
20	Arrowtooth Flounder	*Atheresthes stomias*	FZN	Select	USA, Canada, North Pacific Ocean		
21	Channeled Welk	*Busycotypus canaliculatus*	FZN	PARKnSHOP	USA		

Note: Parenthetic information is for clarification and was not included on the label. Red text is either incorrect or unconfirmed.

	Common Name/Product Name	*Scientific name*	Packing Type	Brand	Source/Country of Origin	Wild-Caught/Farmed	Eco-label
22	Channeled Welk	*Busycotypus canaliculatus*	FZN	Select	USA		
23	Dungeness Crab	*Cancer magister*	PFH	Great Food Hall	Canada		
24	Goldfish	*Carassius auratus*	LIV	PARKnSHOP	China		
25	[Bloched] Snakehead	*Channa maculata*	LIV	PARKnSHOP	China		
26	Milkfish	*Chanos chanos*	FRH	Taste			
27	Yabbies	*Cherax species (incorrectly written - this was on the label)*	LIV	Great Food Hall	Australia		
28	Margaret River	*Cherax Teniumanus*	LIV	Great Food Hall	Australia	WC	
29	Farrer's Scallop [Japanese scallop]	*Chlamys farreri*	FZN	Select	Northeast of China		
30	Farrer's Scallop [Japanese scallop]	*Chlamys farreri*	PFH	Taste	China		
31	Mud Carp	*Cirrhinus molitorella*	LIV	PARKnSHOP	China		
32	Mud Carp	*Cirrhinus molitorella*	PFH	PARKnSHOP			
33	Mud Carp	*Cirrhinus molitorella*	PFH	Taste	China		
34	Pacific Saury	*Cololabis saira*	FZN	Great Food Hall	Japan		
35	Pacific Saury	*Cololabis saira*	FZN	Sojitz LTD	Japan		
36	Pacific Saury	*Cololabis saira*	PFH	Great Food Hall	Japan		
37	Oyster	*Crassostrea gigas*	FZN	Kunihiro INC.	Japan		
38	Oyster	*Crassostrea gigas*	FZN	Taste	Japan		
39	Grass Carp	*Ctenopharyngodon idella*	FRH	Taste	China		
40	Grass Carp	*Ctenopharyngodon idella*	PFH	PARKnSHOP	China		
41	Grass Carp	*Ctenopharyngodon idella*	PFH	Taste	China		
42	Red Tonguesole	*Cynoglossus joyneri*	FRH	Taste	China		
43	Red Tonguesole	*Cynoglossus joyneri*	FZN	Taste	China		
44	Mackerel scad	*Decaperus macarellus*	FRH	Taste	China		
45	Patagonian toothfish	*Dissostichus eleginoides*	FZN	Select	Chile, Uruguay, France		
46	Patagonian toothfish	*Dissostichus eleginoides*	FZN	Taste	Uruguay		
47	Seabass	*Dissostichus eleginoides*	FRH	Great Food Hall	Chile	WC	
48	Seabass	*Dissostichus eleginoides (Patagoian Toothfish)*	PFH	Great Food Hall			
49	Fourfinger threadfin	*Eleutheronema tetradactylum*	FRH	Taste	China		
50	Duskytail grouper	*Epinephelus bleekeri*	LIV	PARKnSHOP	China		
51	Duskytail grouper	*Epinephelus bleekeri*	LIV	Taste	China		

Note: Parenthetic information is for clarification and was not included on the label. Red text is either incorrect or unconfirmed.

	Common Name/Product Name	*Scientific name*	Packing Type	Brand	Source/Country of Origin	Wild-Caught/Farmed	Eco-label
52	Brown-marbled grouper	*Epinephelus fuscoguttatus*	LIV	PARKnSHOP	China		
53	Brown-Marbled Grouper	*Epinephelus fuscoguttatus*	LIV	Taste	China		
54	Star Snapper (scientific name does not match common name: Brown-marbled grouper)	*Epinephelus fusooguttatus (Lutjanus stellas is the scientific name for the Star Snapper)*	FRH	Taste	Malaysia		
55	Honeycomb grouper	*Epinephelus merra*	LIV	PARKnSHOP	China		
56	Greasy grouper	*Epinephelus tauvina*	LIV	PARKnSHOP	China		
57	Greasy grouper	*Epinephelus tauvina (second part of the name was changed from: cololdes)*	LIV	Taste	Taiwan		
58	Atlantic Cod	*Gadus morhua*	FZN	Select	Russia, Norway, Holland		
59	Cod	*Gadus morhua*	FRH	Great Food Hall		WC	
60	Ling	*Genypterus tigerinus*	FRH	Great Food Hall	Australia	WC	
61	American Lobster	*Homarus Americanus*	FZN	Ocean Choice International L.P.	Canada		
62	Boston Lobster	*Homarus Americanus*	PFH	Great Food Hall	USA		
63	Orange Roughy	*Hoplostethus atlanticus*	FZN	Matlaw's	Russia, USA		
64	Orange Roughy	*Hoplostethus atlanticus*	FZN	Select	New Zealand, South Africa, Atlantic Ocean		
65	Blue Eye	*Hyperoglyphe Antarctica*	FRH	Great Food Hall	Australia	WC	
66	Yellow Croaker	*Larimichthys polyactis*	FRH	Taste	China		
67	Yellow Croaker	*Larimichthys polyactis*	PFH	Taste	China		
68	Japanese Seaperch	*Lateolabrax japonicus*	FRH	Taste			
69	Large Mouth Bass (Micropterus salmoides is the scientific name for this)	*Lates calcarifer (this is a brramundi or giant sea perch)*	FZN	Taste	China		
70	Malabar Blood Snapper (Lutjanus malabaricus is the scienific name for this)	*Lates calcarifer (this is a brramundi or giant sea perch)*	PFH	Taste	China		
71	Pacific yellowtail [emperor]	*Lethrinus atkinsoni*	LIV	PARKnSHOP	China		
72	Chinese Noodlefish	*Leucosoma chinensis*	FZN	Taste	China		
73	Chinese Noodlefish	*Leucosoma chinensis*	PFH	PARKnSHOP	China		
74	Chinese Noodlefish	*Leucosoma chinensis*	PFH	Taste	China		
75	Squid	*Loligo Vulgaris*	FRH	Great Food Hall	Italy	WC	

Note: Parenthetic information is for clarification and was not included on the label. Red text is either incorrect or unconfirmed.

	Common Name/Product Name	*Scientific name*	Packing Type	Brand	Source/Country of Origin	Wild-Caught/Farmed	Eco-label
76	White Snapper	*Lutjanidae (incorrectly written - this was on the label)*	FRH	Great Food Hall	Philippines	WC	
77	Mangrove Red Snapper	*Lutjanus argentimaculatus*	LIV	Taste	China		
78	Malabar Blood Snapper	*Lutjanus malabaricus*	LIV	Taste	China		
79	Moses Perch	*Lutjanus russelli*	FRH	Great Food Hall	Australia	WC	
80	Red Emperor	*Lutjanus Sebae*	FRH	Great Food Hall	Australia	WC	
81	Star Snapper	*Lutjanus stellatus*	LIV	PARKnSHOP	China		
82	Star Snapper	*Lutjanus stellatus*	LIV	Taste	China		
83	Star Snapper	*Lutjunus stellatus*	FZN	Taste	China		
84	Capelin	*Mallotus villosus*	FZN	Select	Canada, USA, Norway, Russia, Greenland, Korea		
85	Capelin	*Mallotus villosus*	FZN	Taste	Canada		
86	Capelin	*Mallotus villosus*	PFH	Great Food Hall	Japan		
87	Tiger Prawn	*Marsupenaeus japonicus (Kuruma Prawn)*	FRH	Great Food Hall	Australia	WC	
88	Haddock	*Melanogrammus aeglefinus*	FZN	Great Food Hall	Scotland		
89	King Prawn	*Melicertus latisulcutus*	FRH	Great Food Hall	Australia	WC	
90	Haddock	*Melunogrammus aeglefinus*	PFH	Great Food Hall	Scotland		
91	Largemouth Black Bass	*Micropterus salmoides*	LIV	PARKnSHOP	China		
92	Flathead Grey Mullet	*Mugil cephalus*	FRH	Taste	Thailand		
93	Capelin	*Mullotus villosus*	FZN	Great Food Hall	Japan		
94	Golden Thredfin Bream	*Nemipterus virgatus*	FRH	Taste	China		
95	Surume Ika	*Nototodarus gouldi*	PFH	Great Food Hall	Japan		
96	Surume Ika	*Nototodarus gouldi (flying squid)*	FZN	Great Food Hall	Japan		
97	Channeled Welk	official/standard Chinese name	FZN	PARKnSHOP	USA		
98	Chinese Prawn	official/standard Chinese name	PFH	Taste	China		
99	Cuttlefish	official/standard Chinese name	PFH	PARKnSHOP	China		
100	Fish Maw	official/standard Chinese name	PFH	PARKnSHOP	India		
101	Green Mussel	official/standard Chinese name	FZN	Taste	New Zealand		
102	Mud Crab	official/standard Chinese name	FRH	Taste	China		

Note: Parenthetic information is for clarification and was not included on the label. Red text is either incorrect or unconfirmed.

	Common Name/Product Name	*Scientific name*	Packing Type	Brand	Source/Country of Origin	Wild-Caught/Farmed	Eco-label
103	Octopus	official/standard Chinese name	FZN	Taste	Indonesia		
104	Oyster	official/standard Chinese name	PFH	PARKnSHOP	China		
105	Oyster	official/standard Chinese name	PFH	Taste	China		
106	Ruruma Prawn	official/standard Chinese name	FRH	Taste	Malaysia		
107	Salmon	official/standard Chinese name	FZN	PARKnSHOP	Norway		
108	Sandfish	official/standard Chinese name	FZN	PARKnSHOP	Australia		
109	Sandfish	official/standard Chinese name	FZN	Taste	Australia		
110	Scallop	official/standard Chinese name	FZN	PARKnSHOP	Japan		
111	Scallop	official/standard Chinese name	FZN	Taste	China		
112	Shark	official/standard Chinese name	FZN	PARKnSHOP	Phillipenes		
113	Squid	official/standard Chinese name	PFH	PARKnSHOP	Canada		
114	Squid	official/standard Chinese name	PFH	PARKnSHOP	China		
115	Squid	official/standard Chinese name	FRH	Taste	China		
116	Squid	official/standard Chinese name	FZN	PARKnSHOP	Taiwan		
117	Squid	official/standard Chinese name	FZN	Taste	Tawain		
118	Tiger Sea Cucumber	official/standard Chinese name	FZN	PARKnSHOP	Australia		
119	Tiger Sea Cucumber	official/standard Chinese name	FZN	Taste	Australia		
120	White Prawn	official/standard Chinese name	FZN	Taste	Saudi Arabia		
121	Salmon	*Oncorhynchus gorbuscha*	FZN	Matlaw's	Russia, USA		
122	Salmon	*Oncorhynchus gorbuscha*	FZN	Select	Russia, USA, Japan, Korea		
123	Pink Snapper	*Pagrus Auratus*	FRH	Great Food Hall	Australia	WC	
124	Silver Pomfret	*Pampus argenteus*	FRH	Taste	China		
125	Swallow Tail Pomfret (can't find this fish)	*Pampus Cinereus (this is the Butterflyfish)*	PFH	Taste	Burma		
126	Swallow Tail Pomfret	*Pampus Nozawae Ishikawa*	PFH	PARKnSHOP	Burma		
127	Swallow Tail Pomfret	*Pampus Nozawae Ishikawa (can't find this)*	PFH	Taste	Burma		
128	Pomfret	*Pamus chiinelsl*	FRH	Taste	China		
129	Pomfret (possible scientific names: Brama brama, Brama japonica, Bramidae, Parastromateus niger, Taractes rubescens, Taractichthys steindachneri)	*Pamus chiinelsl (not found)*	FRH	Taste	China		

Note: Parenthetic information is for clarification and was not included on the label. Red text is either incorrect or unconfirmed.

	Common Name/Product Name	*Scientific name*	Packing Type	Brand	Source/Country of Origin	Wild-Caught/Farmed	Eco-label
130	Striped Catfish	*Pangasius hypophthalmus*	FZN	Pacific Seafood Freezing Factory	Vietnam		
131	Striped Catfish	*Pangasius hypophthalmus*	FZN	PARKnSHOP	Vietnam		
132	Striped Catfish	*Pangasius hypophthalmus*	FZN	Select	Vietnam		
133	Striped Catfish	*Pangasius hypophthalmus*	FZN	Taste	Vietnam		
134	Striped Catfish	*Pangasius hypophthalmus*	PFH	PARKnSHOP	Vietnam		
135	Striped Catfish	*Pangasius hypophthalmus*	PFH	Taste	Vietnam		
136	Basa (Pangasius bocourti is the scientific name for this)	*Pangasius hypophthalmus (Iridescent shark or stripped catfish)*	FZN	Sun Wah Marine Products	Vietnam		
137	Lobster	*Panulirus*	PFH	Great Food Hall	Australia		
138	Lobster	*Panulirus species*	FZN	Great Food Hall	Australia		
139	Venus Clam (Circentia callipyga is the scientific name for this)	*Paphiu unduluta (can't find this)*	FZN	Select	Philippines, Japan, China, Taiwan		
140	King Crab	*Paralithodes camtschaticus*	FZN	Great Food Hall	Alaska		
141	King Crab	*Paralithodes camtschaticus*	PFH	Great Food Hall	Alaska		
142	Yesso Scallop	*Patinopecten yessoensis*	FZN	Kunihiro INC.	Japan		
143	Yesso Scallop	*Patinopecten yessoensis*	FZN	Taste	Japan		
144	Mussel	*Pema canuliculus (can't find this)*	FZN	Great Food Hall	New Zealand		
145	[Indian] White Prawn	*Penaeus indicus*	FZN	PARKnSHOP	Saudi Arabia		
146	[Indian] White Prawn	*Penaeus indicus*	FZN	Robian	Saudi Arabia	FA	
147	[Giant] Tiger Prawn	*Penaeus monodon*	FZN	Fortuna / Golden Group	Burma		
148	[Giant] Tiger Prawn	*Penaeus monodon*	FZN	Fresh & Fresh Brand	Vietnam		
149	[Giant] Tiger Prawn	*Penaeus monodon*	FZN	Taste	Vietnam		
150	Black Tiger Prawn	*Penaeus monodon*	FRH	Great Food Hall	Philippines	WC	
151	Shrimp	*Penaeus monodon*	FZN	Great Food Hall	Thailand		
152	Tiger Prawn	*Penaeus monodon*	FZN	Sun Wah Marine Products	Vietnam		
153	Whiteleg Shrimp	*Penaeus vannamei*	FZN	PARKnSHOP	China		
154	Whiteleg Shrimp	*Penaeus vannamei*	FZN	Taste	China		
155	Whiteleg Shrimp	*Penaeus vannamei*	PFH	PARKnSHOP	China		
156	Whiteleg Shrimp	*Penaeus vannamei*	PFH	Taste	China		

Note: Parenthetic information is for clarification and was not included on the label. Red text is either incorrect or unconfirmed.

	Common Name/Product Name	*Scientific name*	Packing Type	Brand	Source/Country of Origin	Wild-Caught/Farmed	Eco-label
157	Black Tiger Shrimp	*Penueus gambus (Tiger Prawn: Penaeus monodon)*	FZN	Fresh & Fresh Brand	Vietnam		
158	Atlantic Sea Scallop	*Placopecten magellanicus*	FZN	Taste	Canada		
159	Bartail Flathead	*Platycephalus indicus*	FRH	Taste	China		
160	Crescent Sweetlips	*Plectorhinchus cinctus*	LIV	PARKnSHOP	China		
161	Crescent Sweetlips	*Plectorhinchus cinctus*	LIV	Taste	China		
162	Palawan Grouper	*Plectropomus leopardus (Coral Trout)*	FRH	Great Food Hall	Philippines	WC	
163	Purple-spotted Bigeye	*Priacanthus tayenus*	FRH	Taste	China		
164	Halibut	*Psettodes erumei*	FRH	Great Food Hall	Norway	WC	
165	Greenland Halibut	*Reinhardtius hippoglossoides*	FZN	Select	Greenland, Ireland, Norway, Russia, Canada, USA		
166	Greenland Halibut	*Reinhardtius hippoglossoides*	FZN	Taste	Canada		
167	Salmon	*Salmo salar*	FZN	PARKnSHOP	Norway		
168	Salmon	*Salmo salar*	FZN	Select	Norway		
169	Salmon	*Salmo salar*	FZN	Storm Seafood	Norway		
170	Salmon	*Salmo Salar*	PFH	Great Food Hall	Ireland		
171	Salmon	*Salmo salar*	PFH	PARKnSHOP	China		
172	Salmon	*Salmo Salar*	PFH	Taste	Norway		
173	Sardine	*Sardina Pilchardus*	FRH	Great Food Hall	Italy	WC	
174	Atlantic Mackerel	*Scomber scombrus*	FZN	Select	Atlantic Oceans, Europe, North America, Japan Sea		
175	Mackerel	*Scomber scombrus*	FZN	Taste	Norway		
176	Golden Redfish	*Sebastes marinus*	FZN	Select	Canada, Icaeland, Russia, Spain, Pacific/Atlanic Oceans		
177	Ocean Perch [Golden Redfish]	*Sebastes marinus*	FZN	Matlaw's	Canada, Iceland, Russia, Spain		
178	King Fish	*Seriola lalandi*	FRH	Great Food Hall	Australia	WC	
179	Yellowtail	*Seriola lalandi*	PFH	Great Food Hall	Australia		
180	Amur Catfish	*Silurus asotus*	FRH	Taste	China		
181	Mandarin Fish	*Siniperca chuatsi*	LIV	PARKnSHOP	China		
182	White Sole	*Solea (incorreclty written - this was on the label)*	FRH	Great Food Hall	Philippines	WC	
183	Lemon Sole	*Solea vulgaris*	FRH	Great Food Hall			
184	Sea Bream	*Sparus aurata*	FRH	Great Food Hall	Italy	WC	
185	Shrimp	*Surgelees entiero crues (can't find this)*	FZN	Crevettes	Madagascar		
186	Alsaska Pollock	*Theragra chalcogramma*	FZN	Matlaw's	Russia, USA		

Note: Parenthetic information is for clarification and was not included on the label. Red text is either incorrect or unconfirmed.

	Common Name/Product Name	*Scientific name*	Packing Type	Brand	Source/Country of Origin	Wild-Caught/Farmed	Eco-label
187	Alsaska Pollock	*Theragra chalcogramma*	FZN	Select	Russia, USA		
188	Yellowfin Tuna	*Thunnus Albacares*	FRH	Great Food Hall	Philippines		
189	Jananese Flying Squid	*Todarodes pacificus*	PFH	PARKnSHOP	Japan		
190	Japanese Flying Squid	*Todarodes pacificus*	FZN	Sojitz LTD	Japn		
191	Snubnone Pampano	*Trachinotus blochii*	LIV	PARKnSHOP	China		
192	Snubnone Pampano	*Trachinotus blochii*	LIV	Taste	China		
193	Snubnone Pampano	*Trachinotus blochii*	PFH	Taste	China		
194	Largehead Hairtial	*Trichiurus lepturus*	FRH	Taste	China		
195	Largehead Hairtial	*Trichiurus lepturus*	FRH	Taste	China		
196	Largehead Hairtial	*Trichiurus lepturus*	FZN	Taste	China		
197	Prawn	*Wshunia prantalay (can't find this)*	FZN	Taste	Thailand		
198	Swordfish	*Xiphias Gladius*	PFH	Taste	Philippines		
199	Amur catfish		FRH	JUSCO	Indonesia		
200	anchove		CAN	John West	Morocco		
201	anchove		CAN	John West	Portugal		
202	anchove		CAN	Pearl River Bridge	China		
203	Aomori Scallop		PFH	CitySuper			
204	Atlantic Cod		FRH	Taste	Holland		
205	Barramundi		FRH	Oliver's	Australia		
206	Bartail flathead		FRH	JUSCO	Vietnam		
207	Belon Oyster		FRH	CitySuper	France		
208	Big Haed Carp		PFH	Wellcome			
209	Black Cod		FRH	Oliver's	USA		
210	Black Cod		PFH	CitySuper	Canada		
211	Black Cod		PFH	ThreeSixty	USA		
212	Black Tiger Prawn		PFH	Sogo			
213	Blackfire Sea Cucumber		FZN	Sogo			
214	Blackfish Sea Cucumber		PFH	JUSCO	Norway		
215	Blackhead		PFH	Sogo			
216	Blue Mussel		PFH	CitySuper			
217	Boston Lobster		LIV	Great Food Hall			
218	Brown Crab		FZN	CitySuper	France		
219	Brown Crab		LIV	CitySuper	Scoland		
220	Capelin		FZN	Sogo			
221	Catfish		FRH	Taste	Vietnam		
222	Catfish		PFH	CitySuper	Vietnam		
223	Cherrystone Clam		FRH	CitySuper	USA		
224	Cherrystone clam		PFH	JUSCO	USA		
225	Cherrystone clams		FRH	Wellcome			
226	Chille Sea Bass		FRH	Oliver's	France		
227	Chinese Noodlefish		FZN	Sogo			
228	Chinese Prawn		LIV	Taste	Thailand		
229	Clam		CAN	Panasia	Thailand		
230	Clam		CAN	Rex Tradings sdn, bhd.	Malaysia		
231	Clam		FRH	CitySuper	USA		

Note: Parenthetic information is for clarification and was not included on the label. Red text is either incorrect or unconfirmed.

	Common Name/Product Name	*Scientific name*	Packing Type	Brand	Source/Country of Origin	Wild-Caught/Farmed	Eco-label
232	Clam		FRH	Oliver's	USA		
233	Clam		PFH	CitySuper	Thailand		
234	Clam		PFH	JUSCO	USA		
235	Cod		FRH	Great Food Hall	French		
236	Cod		FRH	Oliver's	USA	WC	
237	Crab		CAN	Chicken of the Sea International	Vietnam	WC	
238	Crab		FRH	Oliver's	Phillipenes		
239	Crab		LIV	Taste	China		
240	Cuttlefish		CAN	Rex Tradings sdn, bhd.			
241	Cuttlefish		PFH	Taste	China		
242	Dace		CAN	Eagle Coin	China		
243	Dace		CAN	Ganzhu Brand	China		
244	Dace		CAN	Golden Dragon	China		
245	Dace		CAN	Pearl River Bridge	China		
246	Dace		CAN	Yupin	China		
247	Dover sole		FRH	Oliver's	Holland		
248	Doversole		FRH	Great Food Hall	France		
249	Doversole		PFH	CitySuper	Netherlands		
250	Dungeness Crab		LIV	CitySuper	Canada		
251	Fine De Clair		FRH	CitySuper	France		
252	Flathead grey mullet		FRH	JUSCO	Canada		
253	Flounder		FRH	CitySuper	New Zealand		
254	Flounder		PFH	CitySuper	New Zealand		
255	Fourfinger threadfin		FRH	JUSCO	Vietnam		
256	Geoduck		LIV	Taste	China		
257	Geoduck		PFH	CitySuper	Canada		
258	Gillardeau oyster		FRH	Wellcome			
259	Gillardeau oyster		PFH	JUSCO	France		
260	Golden thread		FRH	Wellcome			
261	Golden threadfin bream		FRH	JUSCO	Mexico		
262	Green Carp		PFH	Wellcome			
263	Green Mussel		PFH	CitySuper	New Zealand		
264	Greenland Halibat		FZN	Sogo	Thailand		
265	Greenland Halibut		FRH	Taste	Canada		
266	Grey Mullet		PFH	ThreeSixty			
267	Grouper		PFH	CitySuper	Philippines		
268	Grouper Fish		PFH	Sogo			
269	Haddock		FRH	Taste	UK		
270	Halibut		FRH	Oliver's	USA		
271	Halibut		PFH	CitySuper	Norway		
272	Hard Clam		FRH	CitySuper	Japan		
273	Homard Lobster		LIV	Great Food Hall	France		
274	Horse Head		FRH	Wellcome			
275	Japan Flying Squid		FZN	Sogo			
276	John Dory		FRH	Great Food Hall	France		
277	John Dory		FRH	Oliver's	New Zealand		
278	Jumbo oyster		FRH	Wellcome			
279	Kimi Mussels		FZN	CitySuper	New Zealand		
280	King Crab		FZN	CitySuper	Chile		
281	King Prawn		FRH	Oliver's	China		
282	King Scallop		FRH	Great Food Hall	France		
283	Kippers		PFH	H. Forman & Son	UK		
284	Kumamoto oyster		FRH	Wellcome			
285	Kumanmoto Oyster		PFH	JUSCO	USA		

Note: Parenthetic information is for clarification and was not included on the label. Red text is either incorrect or unconfirmed.

	Common Name/Product Name	*Scientific name*	Packing Type	Brand	Source/Country of Origin	Wild-Caught/Farmed	Eco-label
286	Large Mouth Bass		PFH	ThreeSixty			
287	Large Mullet		PFH	ThreeSixty			
288	Largehead hairtail		FRH	JUSCO	Philippenes		
289	Ling		FRH	CitySuper	New Zealand		
290	Ling		PFH	CitySuper	New Zealand		
291	Lobster		CAN	John West	Scoland		
292	Lobster		PFH	Sogo			
293	Longtooth Grouper		PFH	Sogo			
294	Mackerel		CAN	Ayam Brand	Malaysia		
295	Mackerel		CAN	Fish 4 Ever	Germany		Sustianably Fished
296	Mackerel		CAN	Golden Dragon	Thailand		
297	Mackerel		CAN	John West	Ireland		
298	Mackerel		CAN	Marchuha Co. Ltd.	Japan		
299	Mackerel		CAN	Panasia	Thailand		
300	Mackerel		CAN	Red Marubean	Thailand		
301	Mackerel		CAN	Smiling Fish	Thailand		
302	Mackerel		CAN	Tahara Kantsume Co. Ltd.	Japan		
303	Mackerel		CAN	Tulip	Denmark		
304	Mackerel		FRH	Taste	Canada		
305	Mackerel		FZN	Sogo			
306	Mamila Clam		LIV	Great Food Hall	USA		
307	Manila Calm		FRH	CitySuper	USA		
308	Monkfish		FRH	Great Food Hall	France		
309	Monkfish		PFH	CitySuper	New Zealand		
310	Mud Carp		PFH	Wellcome			
311	Mud crab		LIV	Taste	China		
312	Mussel		CAN	Panasia	Thailand		
313	Mussel		FRH	Oliver's	Australia		
314	Mussel		PFH	JUSCO	USA		
315	Octopus		FRH	CitySuper	Thailand		
316	Octopus		FRH	Great Food Hall	France		
317	Octopus		FZN	Sogo			
318	Octopus		PFH	CitySuper	Thailand		
319	Orange Roughy		FRH	CitySuper	New Zealand		
320	Orange Roughy		FRH	Oliver's	New Zealand		
321	Oyster		FRH	Wellcome			
322	Oyster		OTR	Oliver's	USA		
323	Oyster		PFH	JUSCO	Ireland		
324	Oyster		PFH	Sogo			
325	Oyster		FRH	Wellcome			
326	Pampano		PFH	ThreeSixty			
327	Pearl oyster		FRH	Wellcome			
328	Pike Eel		CAN	Panasia	Thailand		
329	Pike Mackerel		PFH	CitySuper	Japan		
330	Pomfret		FRH	CitySuper	Malaysia	WC	
331	Pomfret		PFH	CitySuper	Malaysia	WC	
332	Pomfret		FRH	JUSCO	Indonesia		
333	Prawn		FRH	Oliver's	China		
334	Prawn		PFH	CitySuper	Thailand		
335	Prawn		PFH	Sogo			
336	Rainbow Trout		FRH	Taste	UK		
337	Read Snapper		FRH	CitySuper	Philippines		
338	Red Clam		CAN	Rex Tradings sdn, bhd.	Malaysia		
339	Red Crab		LIV	Taste	China		

Note: Parenthetic information is for clarification and was not included on the label. Red text is either incorrect or unconfirmed.

	Common Name/Product Name	*Scientific name*	Packing Type	Brand	Source/Country of Origin	Wild-Caught/Farmed	Eco-label
340	Red Grouper		FRH	Oliver's	Phillipenes		
341	Red Sea Bream		PFH	CitySuper			
342	Red Sea Cucumber		PFH	CitySuper	Canada		
343	Red Snapper		PFH	Wellcome			
344	Rock Oyster		FRH	CitySuper	Ireland		
345	Rock Oyster		FRH	CitySuper	Scoland		
346	Rock Oyster		FRH	Oliver's	Scottland		
347	Salmon		CAN	Brunswick	Canada		
348	Salmon		CAN	Hirashom Shop Co. Ltd.	Japan		
349	Salmon		CAN	John West	USA		
350	Salmon		CAN	Natural Sea	USA		
351	Salmon		CAN	Nichiro Co. Ltd.	Japan		
352	Salmon		FRH	CitySuper	Ireland		
353	Salmon		FRH	Oliver's	Scotland		
354	Salmon		FRH	Oliver's	Australia		
355	Salmon		FRH	Oliver's	Australia	WC	
356	Salmon		FRH	Taste	Norway		
357	Salmon		FZN	Sogo			
358	Salmon		PFH	CitySuper			
359	Salmon		PFH	CitySuper	Norway		
360	Salmon		PFH	Great Food Hall			
361	Salmon		PFH	H. Forman & Son	UK		
362	Salmon		PFH	Labeyrie	Norway		
363	Salmon		PFH	Labeyrie	Ireland		
364	Salmon		PFH	Nanuk	Canada	WC	
365	Salmon		PFH	Stormy Delicious Seafood	Norway		
366	Salmon		PFH	Tassal	Australia		
367	Salmon		PFH	Taste			
368	Salmon		PFH	ThreeSixty	Norway		
369	Salmon		PFH	ThreeSixty			
370	Salmon		PFH	ThreeSixty	Ireland		
371	Salmon Steak		PFH	Sogo			
372	Sand-rock fish		FRH	Wellcome			
373	Sardine		CAN	Akebono	Japan		
374	Sardine		CAN	Ayam Brand	Malaysia		
375	Sardine		CAN	B & F	Thailand		
376	Sardine		CAN	Brunswick	Canada		
377	Sardine		CAN	Del Monde	Malaysia		
378	Sardine		CAN	Fish 4 Ever	UK		Sustianably Fished
379	Sardine		CAN	Golden Dragon	Thailand		
380	Sardine		CAN	John West	Portugal		
381	Sardine		CAN	Morjom	Thailand		
382	Sardine		CAN	Porthus	Portugal		
383	Sardine		CAN	Red Marubean	Morocco		
384	Sardine		CAN	Red Marubean	Japan		
385	Sardine		CAN	Smiling Fish	Thailand		
386	Sardine		CAN	Tomi	Philippines		
387	Scallop		FRH	CitySuper	Austalia		
388	Scallop		FRH	Oliver's	Canada		
389	Scallop		PFH	CitySuper	Japan		
390	Scallop		PFH	ThreeSixty	Canada		
391	Sea Bass		FRH	Taste	Uruguay		
392	Sea Scallop		PFH	Sogo			
393	Sea Shrimp		PFH	Sogo			

Note: Parenthetic information is for clarification and was not included on the label. Red text is either incorrect or unconfirmed.

	Common Name/Product Name	*Scientific name*	Packing Type	Brand	Source/Country of Origin	Wild-Caught/Farmed	Eco-label
394	Seabass		FRH	Great Food Hall	France		
395	Seabass		PFH	Sogo			
396	Seabass Steak		FZN	Sogo			
397	Seasoned Sea Couch		FZN	Maote Development Trading	Taiwan		
398	Shortneck Clam		FRH	CitySuper	Japan		
399	Shrimp		CAN	John West	Thailand		
400	Shrimp		FZN	Contessa			
401	Shrimp		PFH	JUSCO	Vietnam		
402	Shrimp		PFH	Sogo		FA	
403	Shrimp		PFH	ThreeSixty			
404	Shrimp		PFH	Wellcome		FA	
405	Snow Crab		FZN	CitySuper	Japan		
406	Sole		FRH	CitySuper	Philippines		
407	Sole		PFH	ThreeSixty	New Zealand		
408	Squid		FRH	Great Food Hall			
409	Squid		FRH	Oliver's	China		
410	Squid		FRH	Taste	China		
411	Squid		PFH	CitySuper	Japan		
412	St. Vaast oyster		FRH	Wellcome			
413	St. Vaast oyster		PFH	JUSCO	France		
414	Tasmanian Salmon		FRH	CitySuper	Austalia		
415	Tasmanian Trout		FRH	CitySuper	Austalia		
416	Threadfin Fish		PFH	Sogo			
417	Tiger Prawn		FRH	CitySuper	Thailand		
418	Tiger Prawn		FRH	CitySuper	Philippines		
419	Tiger Prawn		FRH	CitySuper	India		
420	Tiger Prawn		FRH	Oliver's	Phillipenes		
421	Tiger Prawn		FZN	Ocean Gems	India		
422	Tonguefish		FRH	JUSCO			
423	Tsarkaya oyster		FRH	Wellcome			
424	Tsarkaya oyster		PFH	JUSCO	France		
425	Tsarskaya Oyster		FRH	CitySuper	France		
426	Tuna		CAN	Ayam Brand	Thailand		
427	Tuna		CAN	B & F	Thailand		
428	Tuna		CAN	Bumble Bee	USA		
429	Tuna		CAN	Fish 4 Ever	UK		Sustianably Fished
430	Tuna		CAN	John West	Thailand		
431	Tuna		CAN	Panasia	Thailand		
432	Tuna		CAN	ParknShop			
433	Tuna		CAN	Sea Choice	Thailand		
434	Tuna		CAN	Sealect	Thailand		
435	Tuna		CAN	Select	Thailand		
436	Tuna		CAN	SIRENA	Australia		Drift Net Free, Dolphin Safe
437	Tuna		CAN	Starkist	USA		
438	Tuna		CAN	Wild Oats	USA		Dolphin Safe
439	Tuna		FRH	CitySuper	Philippines		
440	Tuna		PFH	CitySuper	Philippines		
441	Tuna fish steak		PFH	Sogo			
442	Turbot		FRH	Great Food Hall	France		
443	Unicorn leather jacket		FRH	JUSCO	Vietnam		
444	Vietnam Pagasius		FRH	ThreeSixty			
445	Virginica Oyster		FRH	Wellcome			
446	Virginica Oyster		PFH	JUSCO	USA		
447	Washington Oyster		FRH	Oliver's	USA		
448	Whelk		PFH	JUSCO	Canada		
449	White Leg Shrimp		PFH	JUSCO			
450	White pearl oyster		FRH	Wellcome			

Note: Parenthetic information is for clarification and was not included on the label. Red text is either incorrect or unconfirmed.

	Common Name/Product Name	*Scientific name*	Packing Type	Brand	Source/Country of Origin	Wild-Caught/Farmed	Eco-label
451	White pearl oyster		PFH	JUSCO	France		
452	White Prawn		FRH	Taste	Suadi Arabia		
453	White Sea Bass		FRH	CitySuper	Chile		
454	White Sea Bass		PFH	CitySuper	Chile		
455	White Sea Cucumber		PFH	CitySuper	Canada		
456	White shrimp		LIV	Taste	China		
457	White Snapper		FRH	Oliver's	Phillipenes		
458	Whiteleg Shrimp		FZN	Sogo			
459	Witch Flounder		PFH	Sogo			
460	Yellow croaker		FRH	JUSCO	Vietnam		
461	Yellowfin bass		FRH	Wellcome			
462	Yellowfin bream		FRH	Wellcome			
463	Yellowfin Seabream		FRH	JUSCO	United States		
464	Yellowtail		PFH	Great Food Hall			
465	Yesso Scallop		FZN	Sogo			